# FCC Radio Test Report

## *FCC ID: 2ASWW-KS001*

### Original Grant

| | | |
|---|---|---|
| **Report No.** | : | TB-FCC165112 |
| **Applicant** | : | XINCHUANGXIN INTERNATIONAL CO. LTD |
| **Equipment Under Test (EUT)** | | |
| **EUT Name** | : | Mobile phone |
| **Model No.** | : | K1 |
| **Series Model No.** | : | K2, K6, K6 plus, K8 |
| **Brand Name** | : | CORN |
| **Receipt Date** | : | 2019-03-27 |
| **Test Date** | : | 2019-03-27 to 2019-04-09 |
| **Issue Date** | : | 2019-04-10 |
| **Standards** | : | FCC Part 2<br>FCC Part 22 Subpart H, FCC Part 24 Subpart E, 2017<br>ANSI/TIAC63.26: 2015 |
| **Conclusions** | : | **PASS**<br>In the configuration tested, the EUT complied with the standards specified above,<br>The EUT technically complies with the FCC requirements |

| | | |
|---|---|---|
| **Test/Witness Engineer** | : | Jason Xu |
| **Engineer Supervisor** | : | Ivan Su |
| **Engineer Manager** | : | Ray Lai |

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.



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# Contents

# Revision History

| Report No. | Version | Description | Issued Date |
|---|---|---|---|
| TB-FCC165112 | Rev.01 | Initial issue of report | 2019-04-10 |
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# 1. General Information about EUT

## 1.1 Client Information

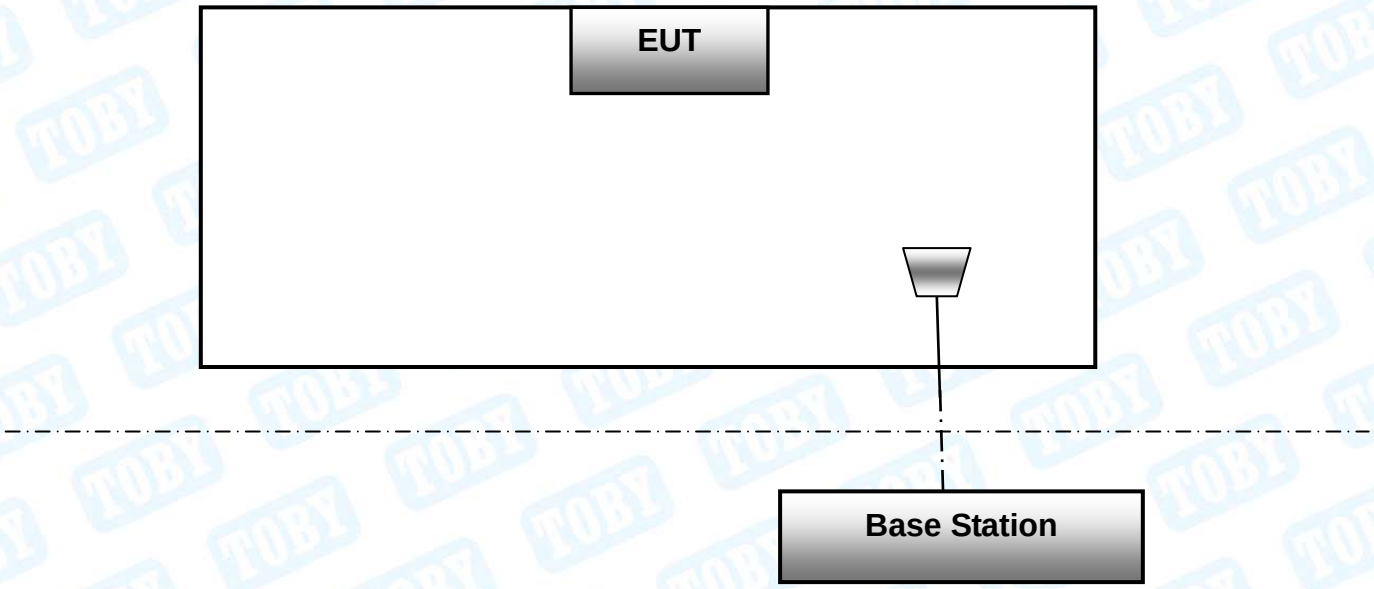
| | | |
|---|---|---|
| **Applicant** | : | XINCHUANGXIN INTERNATIONAL CO. LTD |
| **Address** | : | ROOM 605 6/F, FA YUEN COMMERCIAL BUILDING, 75-77 FA YUEN STREET MONGKOK KL |
| **Manufacturer** | : | XINCHUANGXIN INTERNATIONAL CO. LTD |
| **Address** | : | ROOM 605 6/F, FA YUEN COMMERCIAL BUILDING, 75-77 FA YUEN STREET MONGKOK KL |

## 1.2 General Description of EUT (Equipment Under Test)

| | | | |
|---|---|---|---|
| **EUT Name** | : | Mobile phone | |
| **Models No.** | : | K1, K2, K6, K6 plus, K8 | |
| **Model Difference** | : | All these models are identical in the same PCB layout and electrical circuit, the only difference is the appearance. | |
| **Product Description** | : | Frequency Bands:<br>GSM850; PCS1900; | |
| | | GSM 850 Power : | Cond:33.34 dBm ERP:32.54 dBm |
| | | PCS 1900 Power : | Cond:28.99 dBm EIRP:27.86 dBm |
| | | Antenna Gain: | -2.8 dB PIFA Antenna |
| | | Modulation Type: | GSM/GPRS:GMSK |
| **FCC Operating Frequency** | : | GSM 850: 824.20MHz-848.80MHz<br>PCS1900: 1850.20MHz-1909.80MHz | |
| **Emission Designator** | : | GSM 850: 323KGXW, GSM 1900: 323KGXW<br>GPRS 850: 319KG7W, GPRS 1900: 323KG7W | |
| **Power Rating** | : | DC 3.7V by rechargeable Li-ion Battery(800mAh).<br>USB DC 5V from AC/DC Adapter(FSF-01):<br>Input: AC 100-240V, 50/60Hz, 0.25A.<br>Output: DC 5V, 500mA. | |
| **Software Version** | : | HC201_3232_128160_XCX_1807E_K1_KGTEL | |
| **Hardware Version** | : | CE001-MAIN_V2.0 | |
| **Connecting I/O Port(S)** | : | Please refer to the User's Manual | |

**Note:**
For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

## 1.3 Block Diagram Showing the Configuration of System Tested




The above block diagram of setup is the normal mode. And more detail please refer to the test setup of each test item of bellow.

## 1.4 Description of Support Units

The EUT has been tested as an independent unit.

## 1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

During all testing, EUT is link mode with base station at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range. Frequency range investigated for radiated emission as below：

1. 9kHz~10GHz for GSM850.
2. 9kHz~20GHz for PCS1900.

| Test Channel | | |
|---|---|---|
| **Mode** | **Channel** | **Frequency(MHz)** |
| **GSM 850** | 128 | 824.20 |
| | 190 | 836.60 |
| | 251 | 848.80 |
| **PCS 1900** | 512 | 1850.20 |
| | 661 | 1880.00 |
| | 810 | 1909.80 |

| Test Mode | Description |
|---|---|
| GPRS 850 | highest , middle, lowest channels |
| GPRS 1900 | highest , middle, lowest channels |

**Note:**

(1) The measurements are performed at the highest, middle, lowest available channels.

(2) During the testing procedure, the EUT is in link mode with base station emulator at maximum power level in each test mode.

(3) The EUT has GPRS functions, and after pre-testing, GSM function is the worst case for all the emission tests.

(4) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis, X-plane, Y-plane and Z-plane. The worst case was found positioned on Z-plane as the normal use. Therefore only the test data of this Z-plane was used for radiated emission measurement test.

## 1.6 Measurement Uncertainty

| Test Item | Parameters | Expanded Uncertainty ($U_{Lab}$) |
|---|---|---|
| Conducted Emission | Level Accuracy:<br>9kHz~150kHz<br>150kHz to 30MHz | ±3.42 dB<br>±3.42 dB |
| Radiated Emission | Level Accuracy:<br>9kHz to 30 MHz | ±4.60 dB |
| Radiated Emission | Level Accuracy:<br>30MHz to 1000 MHz | ±4.40 dB |
| Radiated Emission | Level Accuracy:<br>Above 1000MHz | ±4.20 dB |

## 1.7 Test Facility

The testing was performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at:1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China.
At the time of testing, the following bodies accredited the Laboratory:

**CNAS (L5813)**

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

**A2LA Certificate No.: 4750.01**

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025：2005 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01. FCC Accredited Test Site Number: 854351.

**IC Registration No.: (11950A-1)**

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.

# 2. Test Summary

| Test Standards and Test Results | | | |
|---|---|---|---|
| **Standard** | **Document Title** | | |
| FCC Part 2 (10-1-05 Edition) | Frequency Allocations and Radio Treaty Matters; General Rules and Regulations | | |
| FCC Part 22 (10-1-05 Edition) | Public Mobile Services | | |
| FCC Part 24 (10-1-05 Edition) | Personal Communications Services | | |
| **Standard Section** | **Test Item** | **Judgment** | **Remark** |
| 2.1046 | Conducted RF Output Power | PASS | N/A |
| 24.232(d) | Peak-Average Ratio | PASS | N/A |
| 2.1049; 22.917; 24.238 | 99% & -26 dB Occupied Bandwidth | PASS | N/A |
| 2.1055; 22.355; 24.235 | Frequency Stability | PASS | N/A |
| 2.1051; 2.1057; 22.917; 24.238 | Conducted Out of Band Emissions | PASS | N/A |
| 2.1051; 2.1057; 22.917; 24.238 | Band Edge | PASS | N/A |
| 22.913; 24.238 | Transmitter Radiated Power (EIRP/ERP) | PASS | N/A |
| 2.1053; 2.1057; 22.917; 24.238 | Radiated Out of Band Emissions | PASS | N/A |
| **Note:** N/A is an abbreviation for Not Applicable. | | | |

# 3. Test Equipment

| Radiation Emission Test | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Last Cal.** | **Cal. Due Date** |
| Spectrum Analyzer | Agilent | E4407B | MY45106456 | Jul.18, 2018 | Jul. 17, 2019 |
| EMI Test Receiver | Rohde & Schwarz | ESPI | 100010/007 | Jul.18, 2018 | Jul. 17, 2019 |
| Bilog Antenna | ETS-LINDGREN | 3142E | 00117537 | Jan. 27, 2019 | Jan. 26, 2020 |
| Bilog Antenna | ETS-LINDGREN | 3142E | 00117542 | Jan. 27, 2019 | Jan. 26, 2020 |
| Horn Antenna | ETS-LINDGREN | 3117 | 00143207 | Mar.03, 2019 | Mar. 02, 2020 |
| Horn Antenna | ETS-LINDGREN | 3117 | 00143209 | Mar.03, 2019 | Mar. 02, 2020 |
| Loop Antenna | SCHWARZBECK | FMZB 1519 B | 1519B-059 | Jul. 14, 2018 | Jul.13, 2019 |
| Pre-amplifier | Sonoma | 310N | 185903 | Mar.04, 2019 | Mar. 03, 2020 |
| Pre-amplifier | HP | 8449B | 3008A00849 | Mar.03, 2019 | Mar. 02, 2020 |
| Cable | HUBER+SUHNER | 100 | SUCOFLEX | Mar.03, 2019 | Mar. 02, 2020 |
| Positioning Controller | ETS-LINDGREN | 2090 | N/A | N/A | N/A |
| **Antenna Conducted Emission** | | | | | |
| **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Last Cal.** | **Cal. Due Date** |
| Spectrum Analyzer | Agilent | E4407B | MY45106456 | Jul.18, 2018 | Jul. 17, 2019 |
| Spectrum Analyzer | Rohde & Schwarz | ESCI | 100010/007 | Jul.18, 2018 | Jul. 17, 2019 |
| MXA Signal Analyzer | Agilent | N9020A | MY49100060 | Sep. 15, 2018 | Sep. 14, 2019 |
| Vector Signal Generator | Agilent | N5182A | MY50141294 | Sep. 15, 2018 | Sep. 14, 2019 |
| Analog Signal Generator | Agilent | N5181A | MY50141953 | Sep. 15, 2018 | Sep. 14, 2019 |
| RF Power Sensor | DARE!! Instruments | RadiPowerRPR3006W | 17I00015SNO26 | Sep. 15, 2018 | Sep. 14, 2019 |
| | DARE!! Instruments | RadiPowerRPR3006W | 17I00015SNO29 | Sep. 15, 2018 | Sep. 14, 2019 |
| | DARE!! Instruments | RadiPowerRPR3006W | 17I00015SNO31 | Sep. 15, 2018 | Sep. 14, 2019 |
| | DARE!! Instruments | RadiPowerRPR3006W | 17I00015SNO33 | Sep. 15, 2018 | Sep. 14, 2019 |
| Wideband Radio Comunication Tester | Rohde & Schwarz | CMW500 | 144382 | Sep. 15, 2018 | Sep. 14, 2019 |
| Universal Radio Communication Tester | Rohde&Schwarz | CMU200 | 103903 | Jul.18, 2018 | Jul. 17, 2019 |

# 4. Frequency Stability

## 4.1 Test Standard and Requirement

4.1.1 Test Standard

FCC Part 2.1055
FCC Part 22.355
FCC Part 24.235

4.1.2 Requirement

According to FCC section 22.355 and FCC section 24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(1) Temperature:

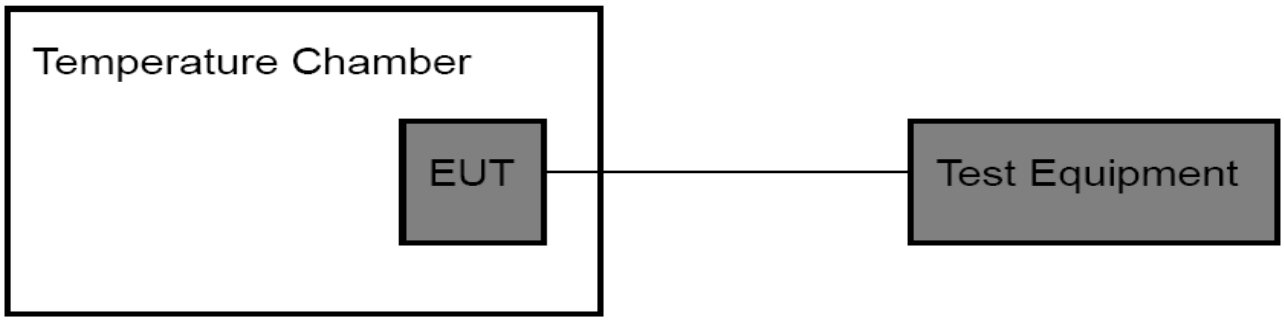
The temperature is varied from -30℃ to +50℃ at intervals of not more than 10℃.

(2) Primary Supply Voltage:

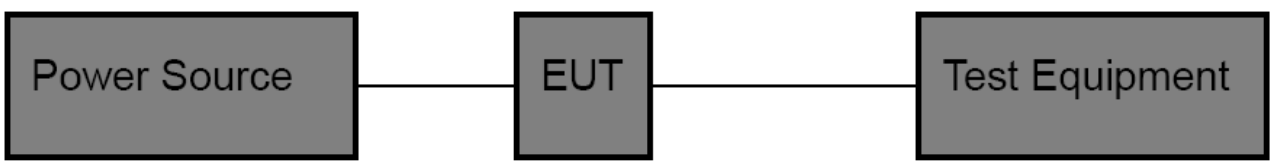
For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at input to the cable normally provide with the equipment, or at the power supply terminals if cables are not normally provided.

## 4.2 Test Setup

For Temperature Test:




For Voltage Test:



## 4.3 Test Procedure

Test Procedures for Temperature Variation:

(1) The EUT was set up in the thermal chamber and connected with the base station.

(2) With power off, the temperature was decreased to -30℃ and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.

(3) With power off, the temperature was raised in 10℃ set up to 50℃ and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.

(4) If the EUT cannot be turned on at -30℃, the testing lowest temperature will be raised in 10℃ step until the EUT can be turned on.

Test Procedures for Voltage Variation:

(1) The EUT was placed in a temperature chamber at 25±5℃ and connected with the base station.

(2) Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.

(3) The variation in frequency was measured for the worst case.

## 4.4 EUT Operating Condition

The Equipment Under Test was set to Communication with the Base Station.

## 4.5 Test Data

Please refer to the Attachment A.

# 5. Conducted RF Output Power

## 5.1 Test Standard and Limit

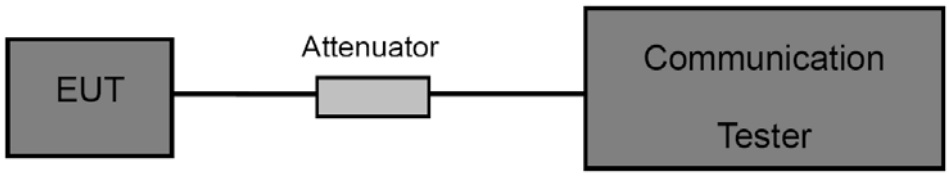
5.1.1 Test Standard

FCC Part 2: 2.1046
FCC Part 22H : 22.913 (a)
FCC Part 24E: 24.232 (c)

5.1.2 Test Limit

| GSM850 | PCS 1900 |
|---|---|
| 38.5 dBm (ERP) | 33 dBm (EIRP) |

## 5.2 Test Setup




## 5.3 Test Procedure

(1) The EUT is coupled to the Base Station with the suitable Attenuator, the path loss is calibrated to correct the reading.
(2) A call is set up by the Base Station to the generic call set up procedure.
(3) Set EUT at maximum power level through base station by power level command.
(4) Then read record the power value from the Base Station in dBm.

## 5.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

## 5.5 Test Data

Please refer to the Attachment B.

# 6. Peak-Average Ratio

## 6.1 Test Standard and Limit

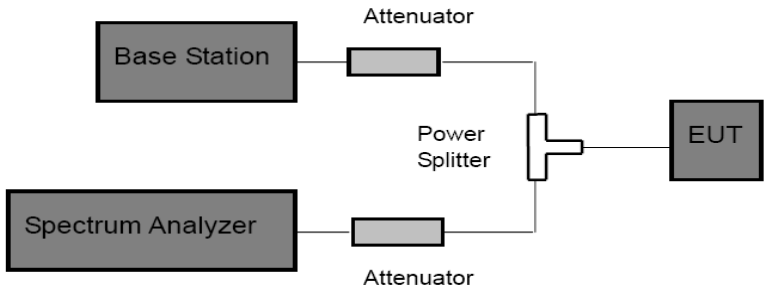
### 6.1.1 Test Standard

FCC Part 24E: 24.232 (d)

### 6.1.2 Test Limit

| |
|---|
| The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB. |

## 6.2 Test Setup




## 6.3 Test Procedure

According with KDB 971168

(1) The signal analyzer's CCDF measurement profile is enabled.
(2) Frequency = carrier center frequency.
(3) Measurement BW>Emission bandwidth of signal.
(4) The signal analyzer was set to collect one million samples to generate the CCDF curve.
(5) The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which of the transmitter is operating at maximum power.

## 6.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

## 6.5 Test Data

Please refer to the Attachment C.

# 7. Radiated Output Power

## 7.1 Test Standard and Limit

7.1.1 Test Standard

FCC Part 22H: 22.913 (a)

FCC Part 24E: 24.232 (c)

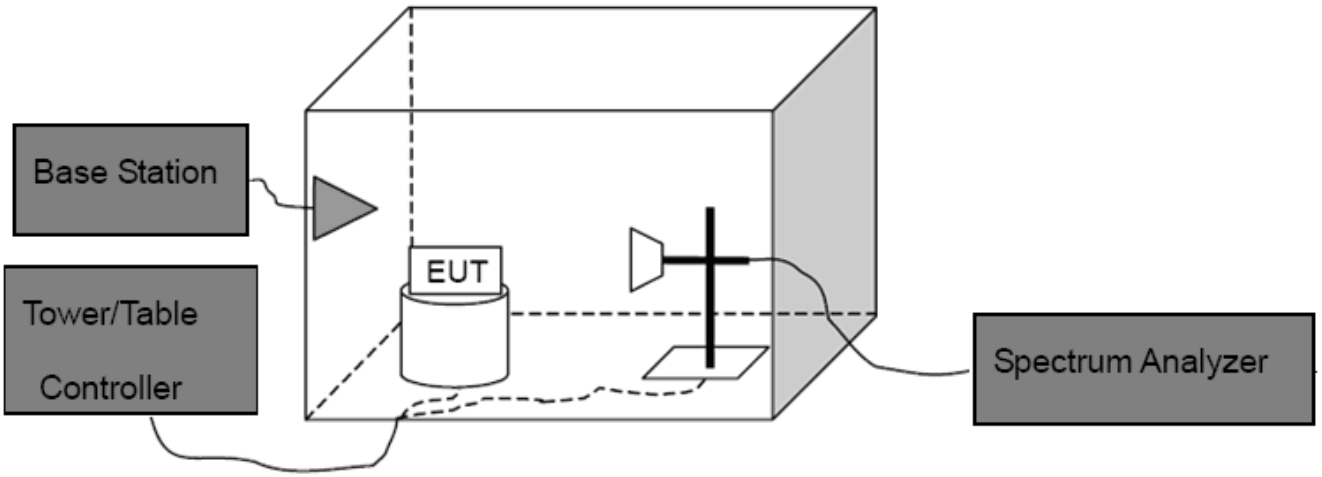
7.1.2 Test Limit

According to FCC Part 22.913 (a), the ERP of Cellular mobile transmitters must not exceed 7 Watts(38.5 dBm).

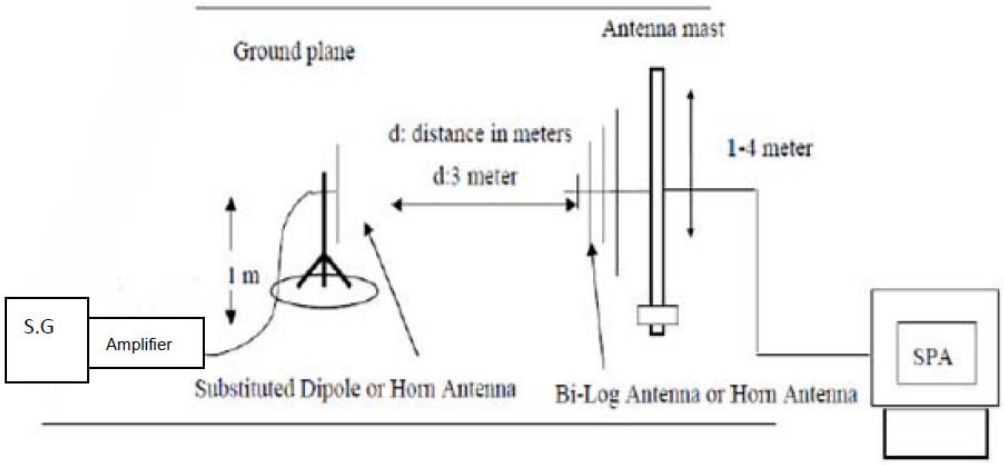
According to FCC Part 24.232 (c), the Mobile/portable stations are limited to 2 Watts(33 dBm) EIRP peak power.

| Cellular Band | | PCS Band | |
|---|---|---|---|
| GSM 850 | UMTS Band V | PCS 1900 | UMTS Band II |
| 38.5 dBm (ERP) | | 33 dBm (EIRP) | |

## 7.2 Test Setup




**Above 1G**




**Substituted Method**

## 7.3 Test Procedure

(1) The EUT was placed on an non-conductive rotating platform with 0.8 meter height in an anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RBW=3 MHz, VBW=3 MHz and peak detector settings.

(2) During the measurement, the EUT was enforced in maximum power and linked with the Base Station. The highest was recorded from analyzer power level (LVT) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.

(3) Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to C63.26. The EUT was replaced by dipole antenna (for frequency below 1 GHz) or Horn antenna (for frequency above 1 GHz) at same location with same polarize of receiver antenna and then a known power of each measure frequency from S.G. was applied into the dipole antenna or Horn antenna through a TX cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna.

**Note: In test, the S.G Connect the Pre-amplifier(Sonoma 310N Pre-amplifier for frequency below 1 GHz, HP 8449B Pre-amplifier for frequency above 1 GHz )**

Then the EUT's EIRP and ERP was calculated with the correction factor:

ERP=S.G.Level +Antenna Gain Cord.(dBd)-Cable Loss(dB)

EIRP=S.G.Level+Antenna Gain Cord.(dBi)-Cable Loss(dB)

## 7.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

## 7.5 Test Data

Please refer to the Attachment D.

# 8. Occupied Bandwidth

## 8.1 Test Standard and Limit

8.1.1 Test Standard

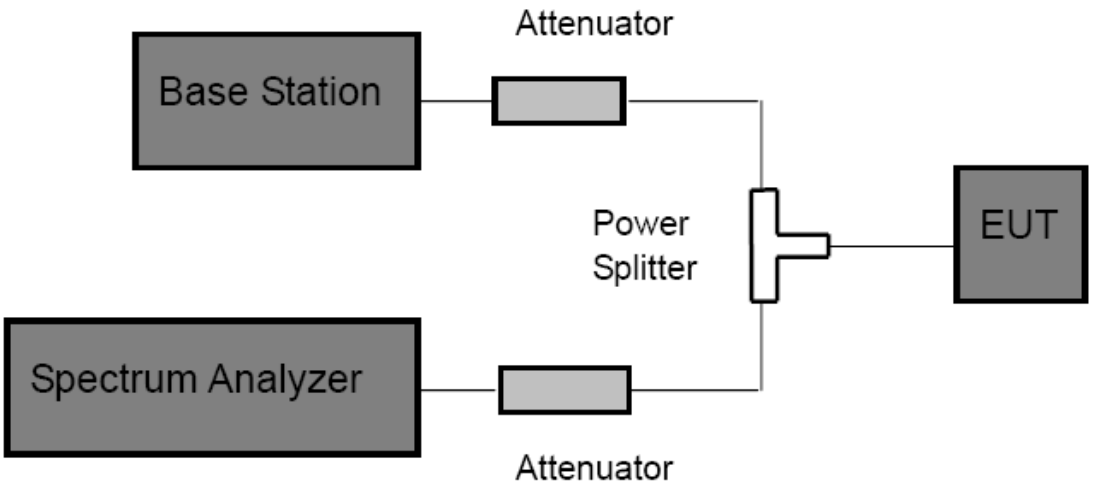
FCC Part 2: 2.1049
FCC Part 22H : 22.913 (a)
FCC Part 24E: 24.232 (c)

8.1.2 Test Requirement

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as 99% power and -26dBC occupied bandwidths.

## 8.2 Test Setup




## 8.3 Test Procedure

(1) The EUT was directly connected to the spectrum analyzer and Base station via power splitter as show in the block diagram above.
(2) The resolution bandwidth of the Spectrum Analyzer is set to at least 1% of the occupied bandwidth.
(3) The low, middle and the high channels are selected to perform tests respectively.
(4) Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; search peak; make a line whose value is 26dB lower than the peak; mark two points which the line intersected the waveform at; finally record the delta of the two points as the occupied bandwidth and the plot.
(5) Set the Spectrum Analyzer Occupied bandwidth function to measure the 99% occupied bandwidth.

## 8.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

## 8.5 Test Data

Please refer to the Attachment E.

# 9. Conducted Out of Band Emissions

## 9.1 Test Standard and Limit

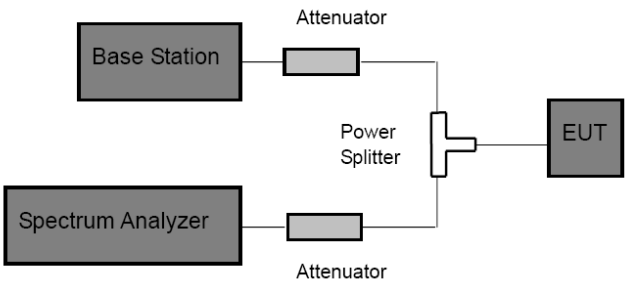
### 9.1.1 Test Standard

FCC Part 2: 2.1051, 2.1057
FCC Part 22H: 22.917(a)
FCC Part 24E: 24.238(a)

### 9.1.2 Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power(P) by a factor of at least 43+10log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

## 9.2 Test Setup




## 9.3 Test Procedure

(1) The EUT was directly connected to the spectrum analyzer and Base station via power splitter as show in the block diagram above.
(2) Spectrum Setting:
Frequency bellow 1 GHz: RBW=100 kHz, VBW=300 kHz.
Frequency above 1 GHz: RBW=1 MHz, VBW=3 MHz.
(3) The low, middle and high channels of each band and mode's spurious emissions for 30 MHz to 10$^{th}$ Harmonic were measured by Spectrum analyzer.

## 9.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

## 9.5 Test Data

Please refer to the Attachment F.

# 10. Band Edge Test

## 10.1 Test Standard and Limit

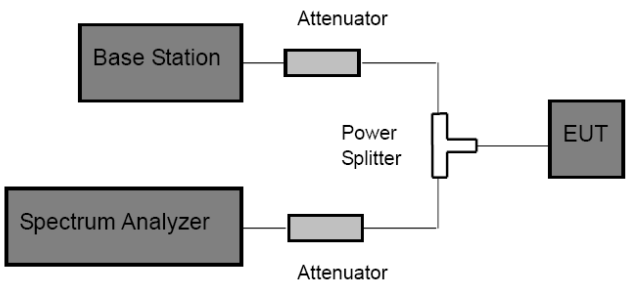
### 10.1.1 Test Standard

FCC Part 2: 2.1051, 2.1057
FCC Part 22H: 22.917(a)
FCC Part 24E: 24.238(a)

### 10.1.2 Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power(P) by a factor of at least 43+10log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

## 10.2 Test Setup




## 10.3 Test Procedure

(1) The EUT was directly connected to the spectrum analyzer and Base station via power splitter as show in the block diagram above.
(2) Spectrum Setting:
GSM and PCS: RBW≥1% 26db bandwidth, VBW=3 RBW, Span 1 MHz, Detector: Peak Mode.
WCDMA: RBW≥1% 26db bandwidth, VBW=3 RBW, Span 10 MHz, Detector: Peak Mode.
(3) The band edges of low and high channels for the highest RF powers were measured.

## 10.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

## 10.5 Test Data

Please refer to the Attachment G.

# 11. Radiated Out Band of Emissions

## 11.1 Test Standard and Limit

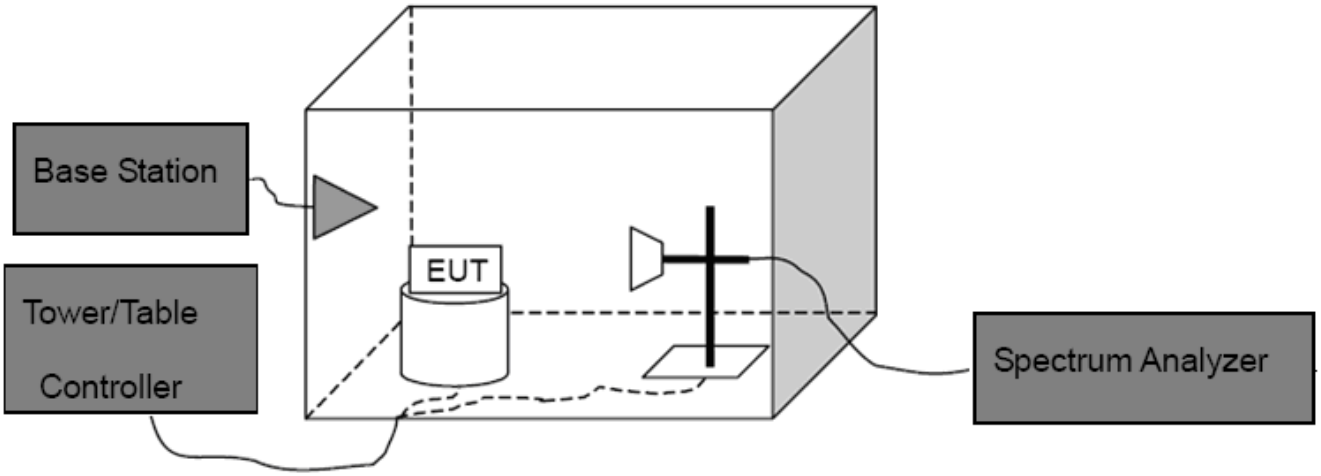
### 11.1.1 Test Standard

FCC Part 2: 2.1053, 2.1057
FCC Part 22H: 22.917
FCC Part 24E: 24.238

### 11.1.2 Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power(P) by a factor of at least 43+10log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

## 11.2 Test Setup




## 11.3 Test Procedure

(1) The test system setup as show in the block diagram above.
(2) The EUT was placed on an non-conductive rotating platform in an anechoic chamber. The radiated spurious emissions from 30MHz to 10$^{th}$ harmonious of fundamental frequency were measured at 3 m with a test antenna and a spectrum analyzer with RBW=1 MHz, VBW=1 MHz, peak detector settings.
(3) During the measurement, the EUT was enforced in maximum power and linked with a base station. All the spurious emissions at 3m were measured by rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
(4) When found the maximum level of emissions from the EUT. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB=10 log(TX power in Watts/0.001)-the absolute level
Spurious attenuation limit in dB=43+10 log(power out in Watts)

## 11.4 EUT Operating Condition

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

## 11.5 Test Data

Please refer to the Attachment H.

# Attachment A--Frequency Stability

## Temperature Variation

| Temperature Variation GSM 850 (CH190) | | | | | | |
|---|---|---|---|---|---|---|
| Temperature (℃) | GSM | | GPRS | | EDGE | |
| | Freq. Dev. (Hz) | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm) |
| -30 | 15 | 0.018 | 16 | 0.019 | / | / |
| -20 | 16 | 0.019 | 20 | 0.024 | / | / |
| -10 | 14 | 0.017 | 18 | 0.022 | / | / |
| 0 | 18 | 0.022 | 15 | 0.018 | / | / |
| 10 | 20 | 0.024 | 19 | 0.023 | / | / |
| 20 | 16 | 0.019 | 11 | 0.013 | / | / |
| 30 | 17 | 0.020 | 20 | 0.024 | / | / |
| 40 | 21 | 0.025 | 17 | 0.020 | / | / |
| 50 | 15 | 0.018 | 19 | 0.023 | / | / |
| 60 | 14 | 0.017 | 17 | 0.020 | / | / |
| Limit | 2.5 (ppm) | | | | | |
| Result | PASS | | | | | |

| Temperature Variation GSM 1900 (CH661) | | | | | | |
|---|---|---|---|---|---|---|
| Temperature (℃) | GSM | | GPRS | | EDGE | |
| | Freq. Dev. (Hz) | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm) |
| -30 | 12 | 0.018 | 20 | 0.030 | / | / |
| -20 | 16 | 0.024 | 22 | 0.033 | / | / |
| -10 | 12 | 0.018 | 18 | 0.027 | / | / |
| 0 | 11 | 0.017 | 16 | 0.024 | / | / |
| 10 | 14 | 0.021 | 17 | 0.026 | / | / |
| 20 | 17 | 0.026 | 19 | 0.029 | / | / |
| 30 | 15 | 0.023 | 20 | 0.030 | / | / |
| 40 | 16 | 0.024 | 19 | 0.029 | / | / |
| 50 | 14 | 0.021 | 16 | 0.024 | / | / |
| 60 | 13 | 0.020 | 15 | 0.023 | / | / |
| Limit | 2.5 (ppm) | | | | | |
| Result | PASS | | | | | |

## Voltage Variation

| Voltage Variation GSM 850 (CH190) | | | | | | |
|---|---|---|---|---|---|---|
| Voltage (V) | GSM | | GPRS | | EDGE | |
| | Freq. Dev. (Hz) | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm) |
| 3.15 | 23 | 0.027 | 27 | 0.032 | / | / |
| 3.70 | 25 | 0.030 | 24 | 0.029 | / | / |
| 4.26 | 26 | 0.031 | 28 | 0.033 | / | / |
| Limit | 2.5 (ppm) | | | | | |
| Result | PASS | | | | | |

| Voltage Variation GSM 1900 (CH661) | | | | | | |
|---|---|---|---|---|---|---|
| Voltage (V) | GSM | | GPRS | | EDGE | |
| | Freq. Dev. (Hz) | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm) | Freq. Dev. (Hz) | Deviation (ppm) |
| 3.15 | 23 | 0.035 | 26 | 0.039 | / | / |
| 3.70 | 22 | 0.033 | 28 | 0.042 | / | / |
| 4.26 | 25 | 0.038 | 24 | 0.036 | / | / |
| **Limit** | **2.5 (ppm)** | | | | | |
| **Result** | **PASS** | | | | | |

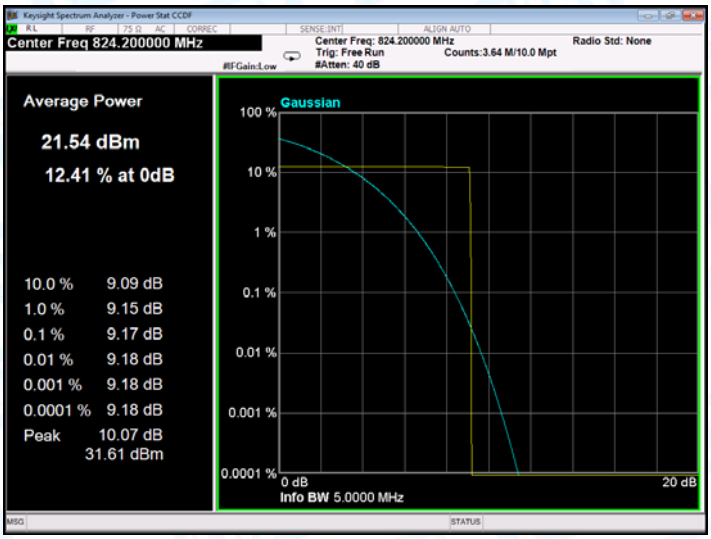
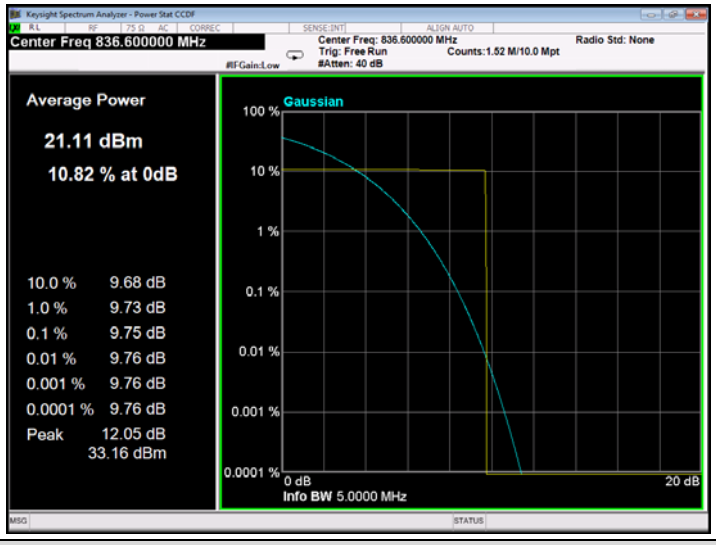
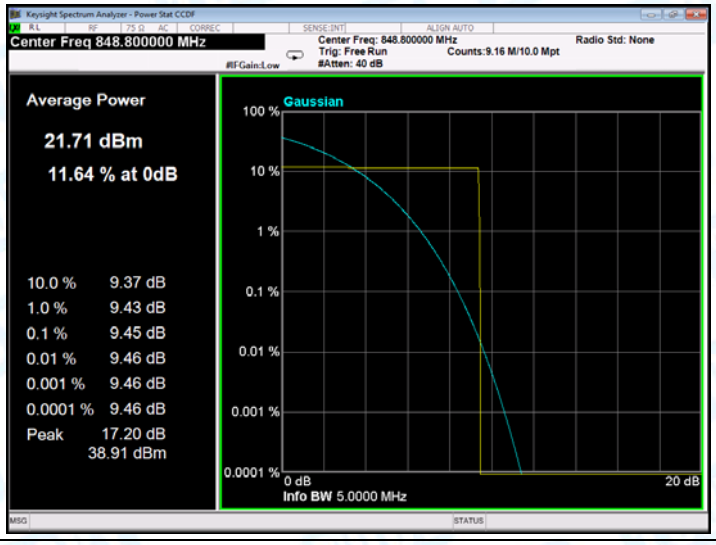
# Attachment B--Conducted RF Output Power

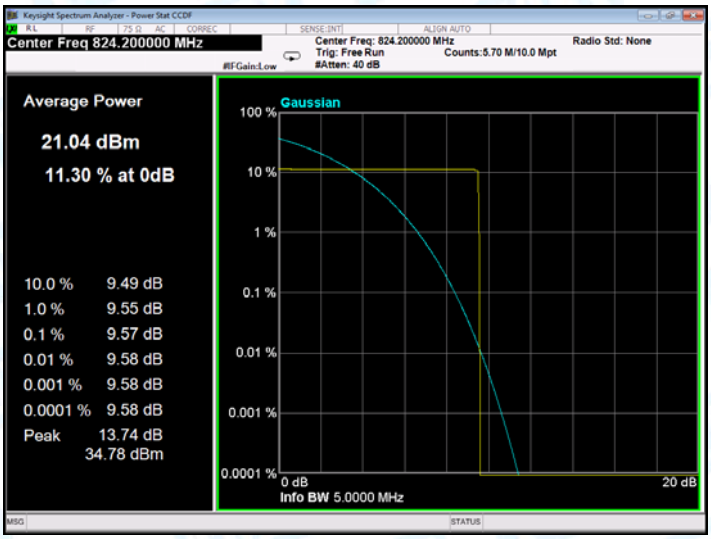
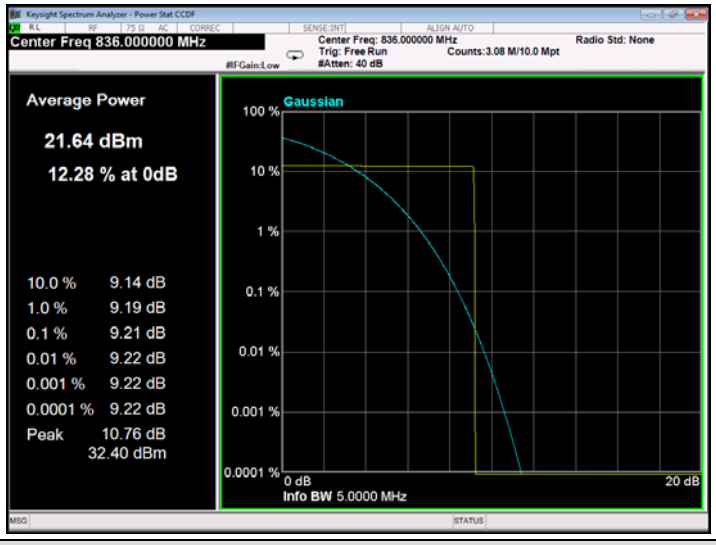
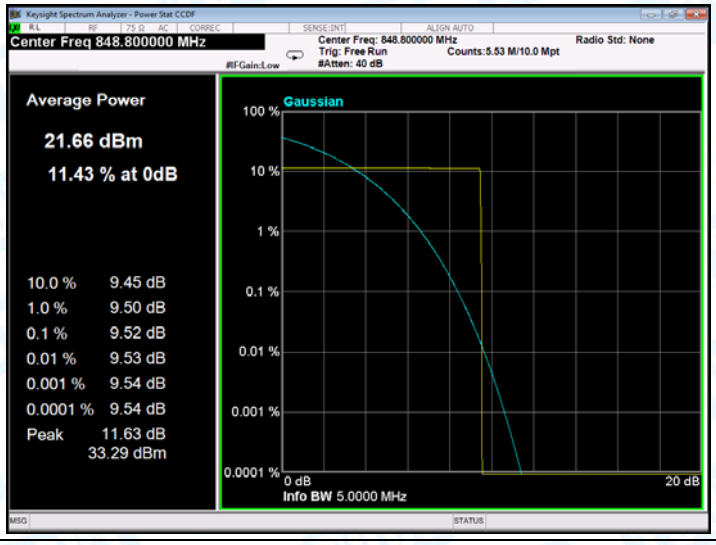
| GSM 850 | | | | |
|---|---|---|---|---|
| Mode | Channel | Frequency (MHz) | Conducted Power (dBm) | Conducted Power (W) |
| GSM 850 | 128 | 824.2 | 33.27 | 2.123 |
| | 190 | 836.6 | 33.23 | 2.104 |
| | 251 | 848.8 | 33.34 | 2.158 |
| GPRS 850 (1 Slot) | 128 | 824.2 | 32.69 | 1.858 |
| | 190 | 836.6 | 32.85 | 1.928 |
| | 251 | 848.8 | 32.78 | 1.897 |
| GPRS 850 (2 Slot) | 128 | 824.2 | 32.14 | 1.637 |
| | 190 | 836.6 | 32.23 | 1.671 |
| | 251 | 848.8 | 32.29 | 1.694 |
| GPRS 850 (3 Slot) | 128 | 824.2 | 31.85 | 1.531 |
| | 190 | 836.6 | 31.94 | 1.563 |
| | 251 | 848.8 | 31.76 | 1.500 |
| GPRS 850 (4 Slot) | 128 | 824.2 | 30.68 | 1.169 |
| | 190 | 836.6 | 30.84 | 1.213 |
| | 251 | 848.8 | 30.58 | 1.143 |

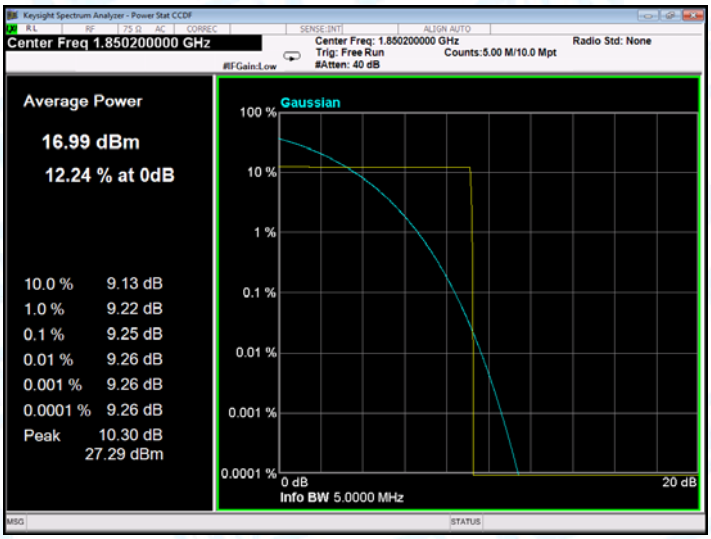
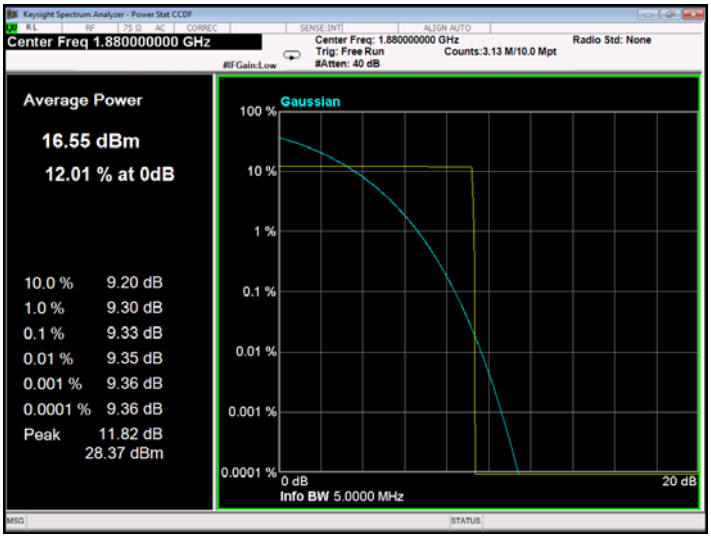
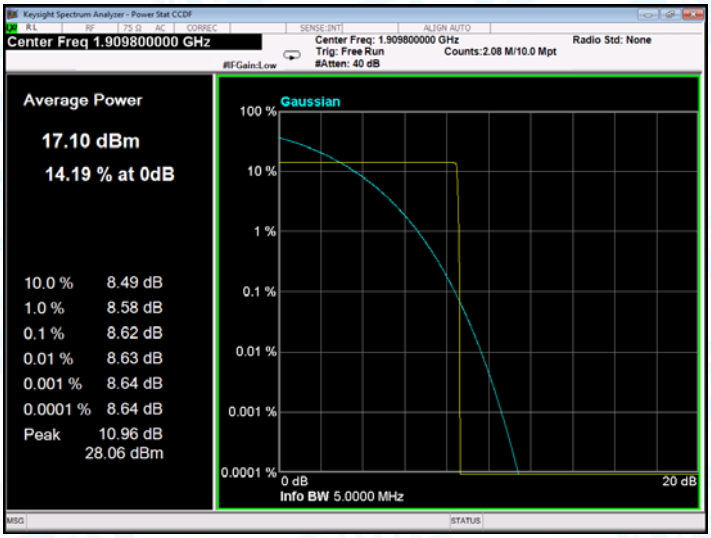
| PCS 1900 | | | | |
|---|---|---|---|---|
| Mode | Channel | Frequency (MHz) | Conducted Power (dBm) | Conducted Power (W) |
| GSM 1900 | 512 | 1850.2 | 28.69 | 0.740 |
| | 661 | 1880.0 | 28.46 | 0.701 |
| | 810 | 1909.8 | 28.99 | 0.793 |
| GPRS 1900 (1 Slot) | 512 | 1850.2 | 28.42 | 0.695 |
| | 661 | 1880.0 | 28.34 | 0.682 |
| | 810 | 1909.8 | 28.24 | 0.667 |
| GPRS 1900 (2 Slot) | 512 | 1850.2 | 27.96 | 0.625 |
| | 661 | 1880.0 | 27.87 | 0.612 |
| | 810 | 1909.8 | 27.59 | 0.574 |
| GPRS 1900 (3 Slot) | 512 | 1850.2 | 27.32 | 0.540 |
| | 661 | 1880.0 | 27.41 | 0.551 |
| | 810 | 1909.8 | 27.29 | 0.536 |
| GPRS 1900 (4 Slot) | 512 | 1850.2 | 26.85 | 0.484 |
| | 661 | 1880.0 | 26.75 | 0.473 |
| | 810 | 1909.8 | 26.59 | 0.456 |

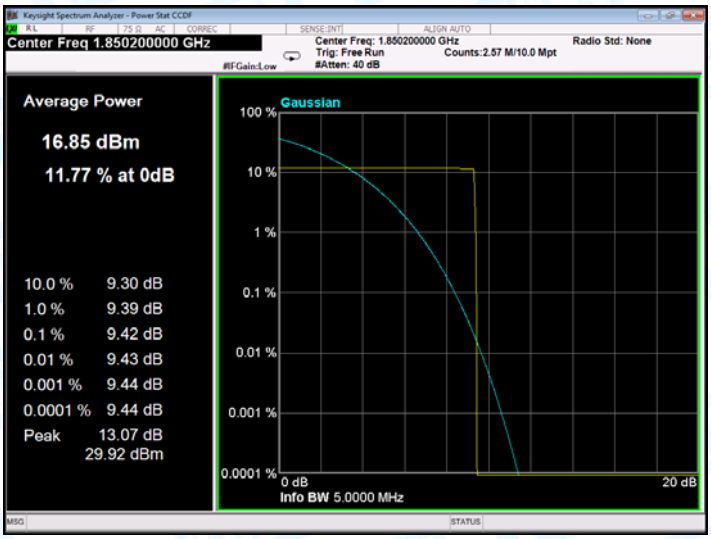
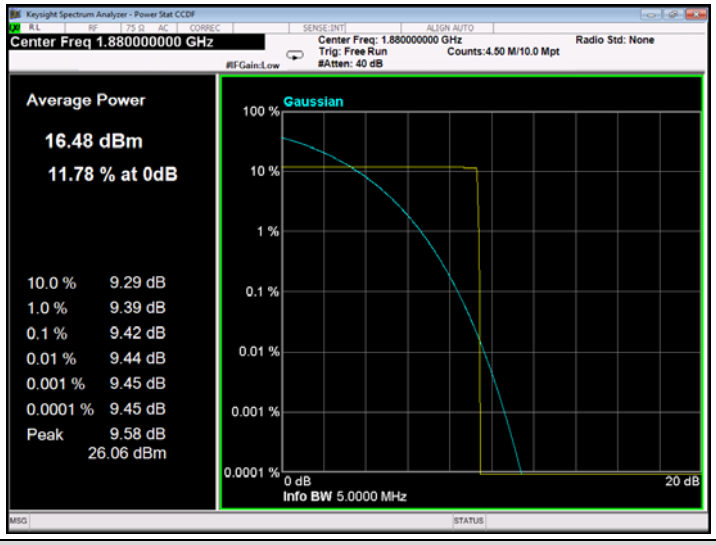
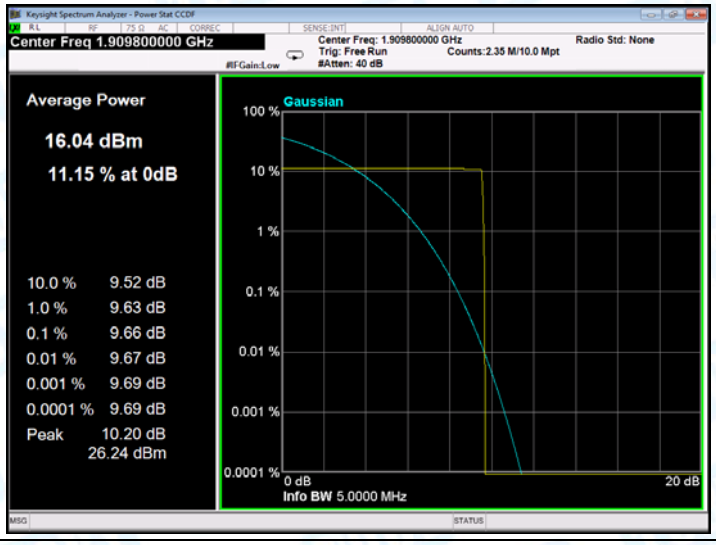
# Attachment C--Peak-Average Ratio

| Mode | Channel | Frequency (MHz) | PAR with 0.1% probability (dB) |
|---|---|---|---|
| GSM 850 | 128 | 824.2 | 9.17 |
| | 190 | 836.6 | 9.75 |
| | 251 | 848.8 | 9.45 |
| GPRS 850 | 128 | 824.2 | 9.57 |
| | 190 | 836.6 | 9.21 |
| | 251 | 848.8 | 9.52 |
| PCS 1900 | 512 | 1850.2 | 9.25 |
| | 661 | 1880.0 | 9.33 |
| | 810 | 1909.8 | 8.62 |
| GPRS 1900 | 512 | 1850.2 | 9.42 |
| | 661 | 1880.0 | 9.42 |
| | 810 | 1909.8 | 9.66 |
| Limit≤ 13dB | | | |

| GSM 850 |
| --- |
| CH 128 |
|  |
| CH 190 |
|  |
| CH 251 |
|  |

| GPRS 850 |
| --- |
| CH 128 |
|  |
| CH 190 |
|  |
| CH 251 |
|  |

| PCS 1900 |
| --- |
| CH 512 |
|  |
| CH 661 |
|  |
| CH 810 |
|  |

| GPRS 1900 |
| --- |
| CH 512 |
|  |
| CH 661 |
|  |
| CH 810 |
|  |

# Attachment D-- Radiated Output Power

Measurement Data (worst case)

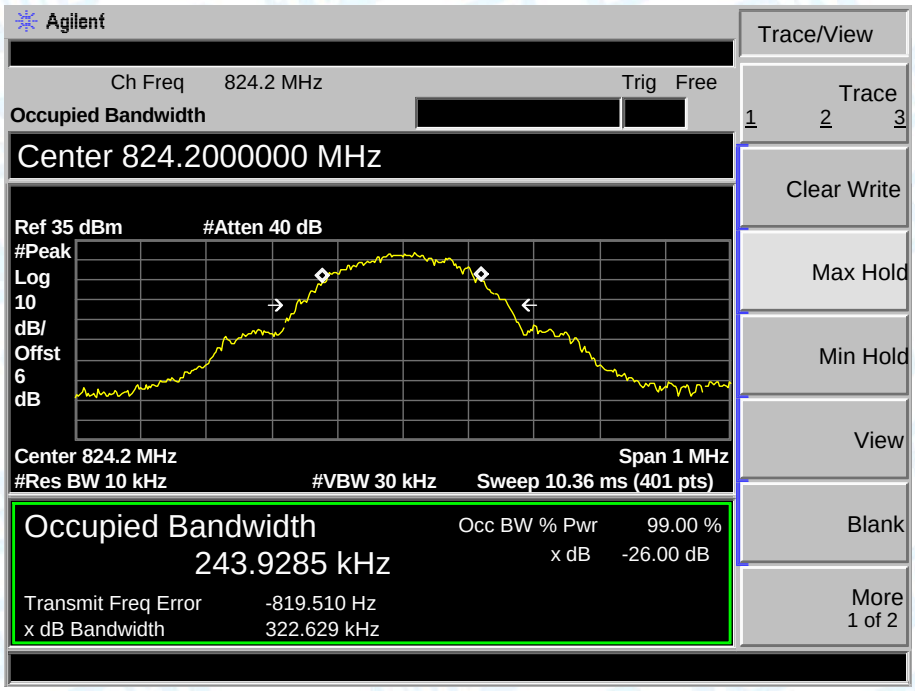
| GSM 850 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Mode | Channel | Frequency (MHz) | Antenna (H&V) | SG Level (dBm) | Antenna Factor (dBd) | Cable Loss (dB) | ERP Power (dBm) | ERP Power (W) |
| GSM 850 | 128 | 824.2 | H | 30.09 | 3.46 | 1.26 | 32.29 | 1.694 |
| | | | V | 26.76 | 3.46 | 1.26 | 28.96 | 0.787 |
| | 190 | 836.6 | H | 29.98 | 3.82 | 1.26 | 32.54 | 1.795 |
| | | | V | 25.40 | 3.82 | 1.26 | 27.96 | 0.625 |
| | 251 | 848.8 | H | 29.55 | 4.16 | 1.26 | 32.45 | 1.758 |
| | | | V | 25.33 | 4.16 | 1.26 | 28.23 | 0.665 |
| GPRS 850 (1 Slot) | 128 | 824.2 | H | 28.65 | 3.46 | 1.26 | 30.85 | 1.216 |
| | | | V | 24.04 | 3.46 | 1.26 | 26.24 | 0.421 |
| | 190 | 836.6 | H | 27.69 | 3.82 | 1.26 | 30.25 | 1.059 |
| | | | V | 23.56 | 3.82 | 1.26 | 26.12 | 0.409 |
| | 251 | 848.8 | H | 27.68 | 4.16 | 1.26 | 30.58 | 1.143 |
| | | | V | 23.52 | 4.16 | 1.26 | 26.42 | 0.439 |
| Limit | | | | | | | 38.5 | 7 |

| PCS 1900 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Mode | Channel | Frequency (MHz) | Antenna (H&V) | SG Level (dBm) | Antenna Factor (dBi) | Cable Loss (dB) | EIRP Power (dBm) | EIRP Power (W) |
| GSM 1900 | 512 | 1850.2 | H | 25.44 | 5.01 | 2.59 | 27.86 | 0.611 |
| | | | V | 21.90 | 5.01 | 2.59 | 24.32 | 0.270 |
| | 661 | 1880.0 | H | 25.62 | 4.82 | 2.59 | 27.85 | 0.610 |
| | | | V | 21.98 | 4.82 | 2.59 | 24.21 | 0.264 |
| | 810 | 1909.8 | H | 25.49 | 4.45 | 2.59 | 27.35 | 0.543 |
| | | | V | 22.00 | 4.45 | 2.59 | 23.86 | 0.243 |
| GPRS 1900 (1 Slot) | 512 | 1850.2 | H | 22.94 | 5.01 | 2.59 | 25.36 | 0.344 |
| | | | V | 19.82 | 5.01 | 2.59 | 22.24 | 0.167 |
| | 661 | 1880.0 | H | 23.25 | 4.82 | 2.59 | 25.48 | 0.353 |
| | | | V | 20.09 | 4.82 | 2.59 | 22.32 | 0.171 |
| | 810 | 1909.8 | H | 23.83 | 4.45 | 2.59 | 25.69 | 0.371 |
| | | | V | 20.28 | 4.45 | 2.59 | 22.14 | 0.164 |
| Limit | | | | | | | 33 | 2 |

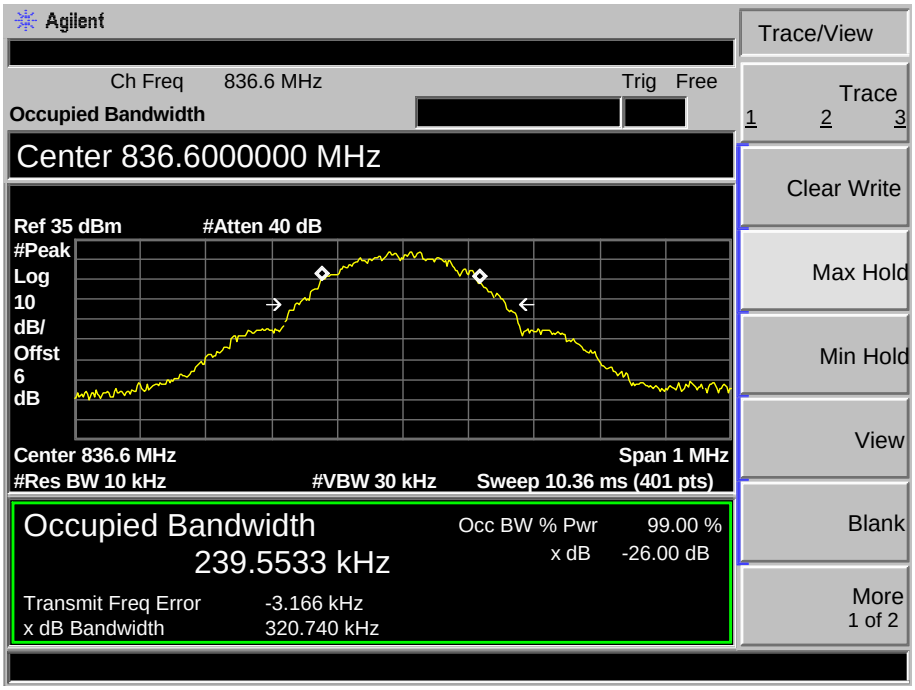
# Attachment E--Occupied Bandwidth

| GSM 850 | | | | |
|---|---|---|---|---|
| **Mode** | **Channel** | **Frequency (MHz)** | **99% OBW (KHz)** | **-26dB Bandwidth (kHz)** |
| GSM 850 | 128 | 824.2 | 243.9285 | 322.629 |
| | 190 | 836.6 | 239.5533 | 320.740 |
| | 251 | 848.8 | 243.9323 | 321.124 |
| GPRS 850 (1 Slot) | 128 | 824.2 | 244.5223 | 319.405 |
| | 190 | 836.6 | 242.8428 | 319.154 |
| | 251 | 848.8 | 246.1760 | 315.053 |
| **PCS 1900** | | | | |
| **Mode** | **Channel** | **Frequency (MHz)** | **99% OBW (KHz)** | **-26dB Bandwidth (kHz)** |
| GSM 1900 | 512 | 1850.2 | 244.4044 | 319.002 |
| | 661 | 1880.0 | 254.2417 | 318.924 |
| | 810 | 1909.8 | 249.2877 | 322.543 |
| GPRS 1900 (1 Slot) | 512 | 1850.2 | 247.6711 | 322.547 |
| | 661 | 1880.0 | 246.0242 | 318.420 |
| | 810 | 1909.8 | 248.2497 | 312.875 |

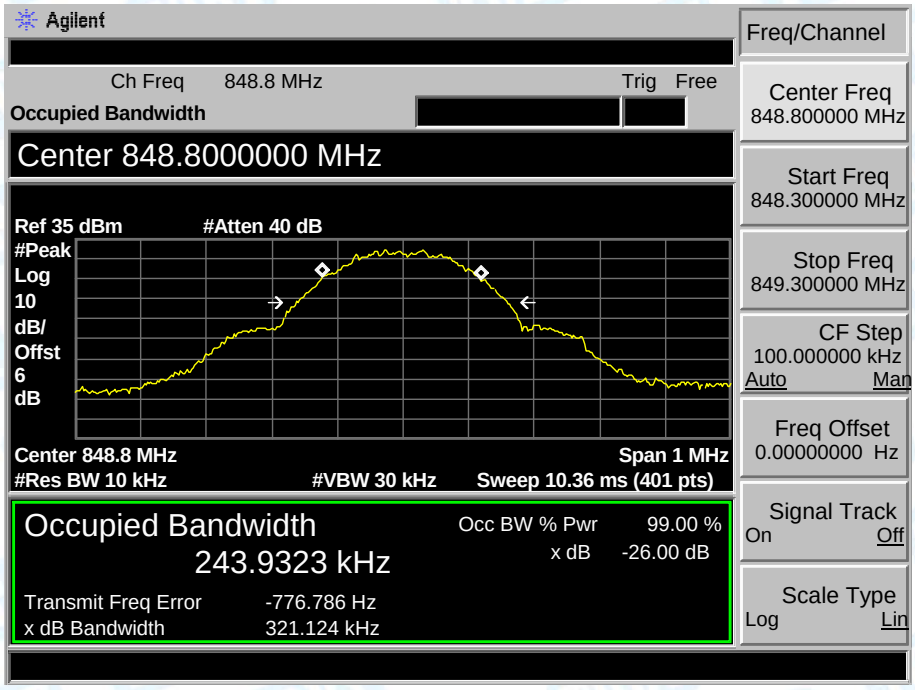
| GSM 850 |
| --- |
| CH 128 |



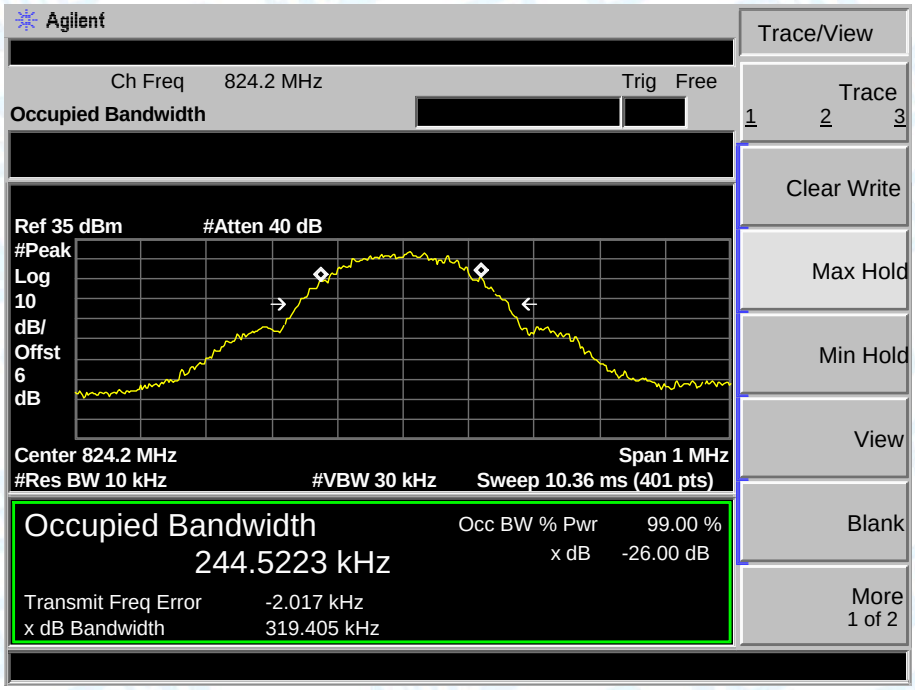

| CH 190 |
| --- |



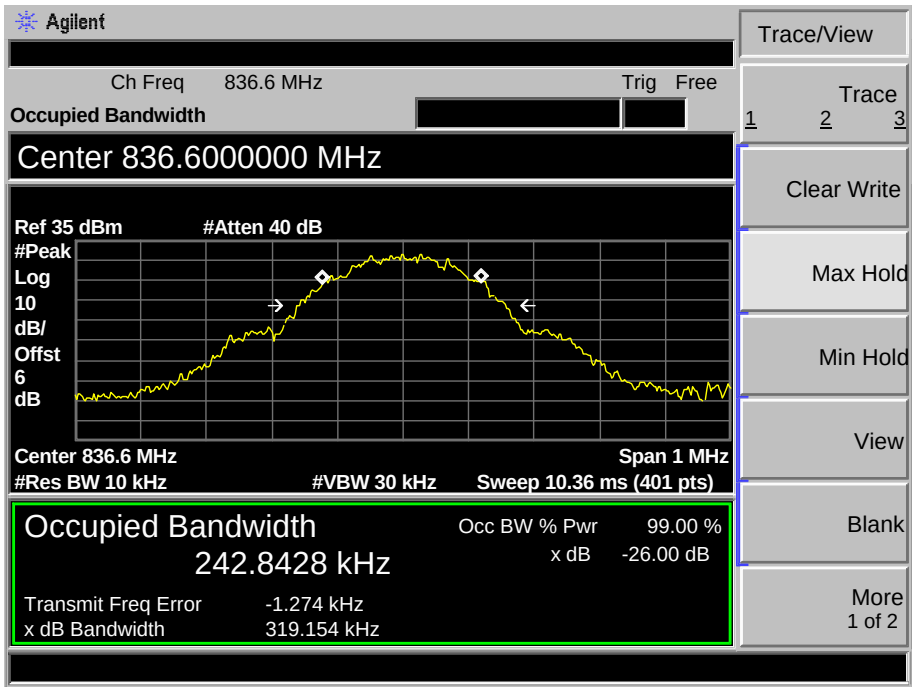
CH 251


Agilent
Ch Freq 848.8 MHz
Trig Free
Occupied Bandwidth
Center 848.8000000 MHz
Ref 35 dBm
#Atten 40 dB
#Peak
Log
10
dB/
Offst
6
dB
Center 848.8 MHz
#Res BW 10 kHz
#VBW 30 kHz
Span 1 MHz
Sweep 10.36 ms (401 pts)
Occupied Bandwidth
243.9323 kHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error -776.786 Hz
x dB Bandwidth 321.124 kHz
Freq/Channel
Center Freq
848.800000 MHz
Start Freq
848.300000 MHz
Stop Freq
849.300000 MHz
CF Step
100.000000 kHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Scale Type
Log Lin

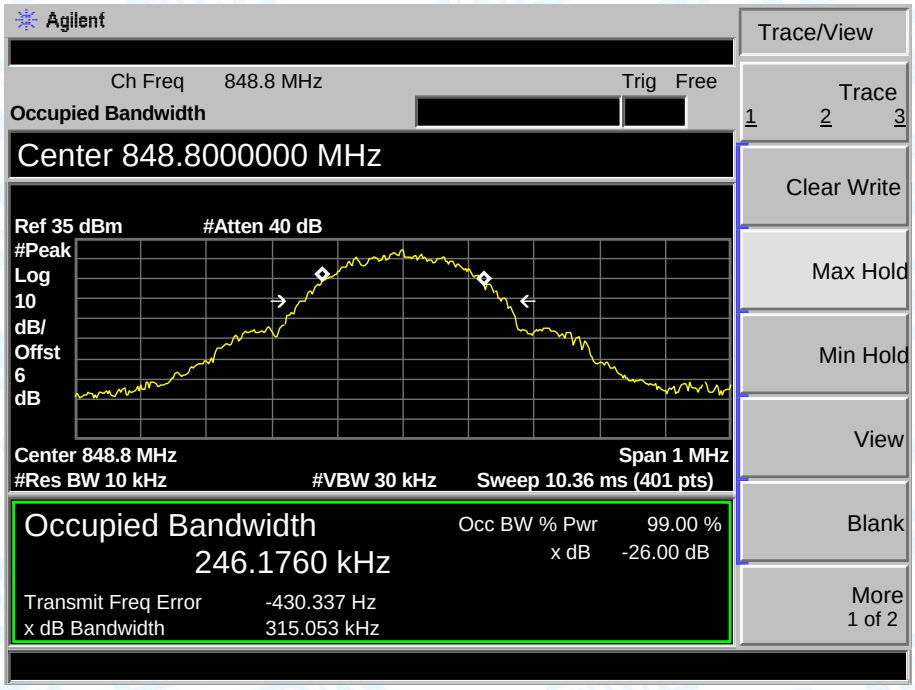
| GPRS 850 |
| --- |
| CH 128 |



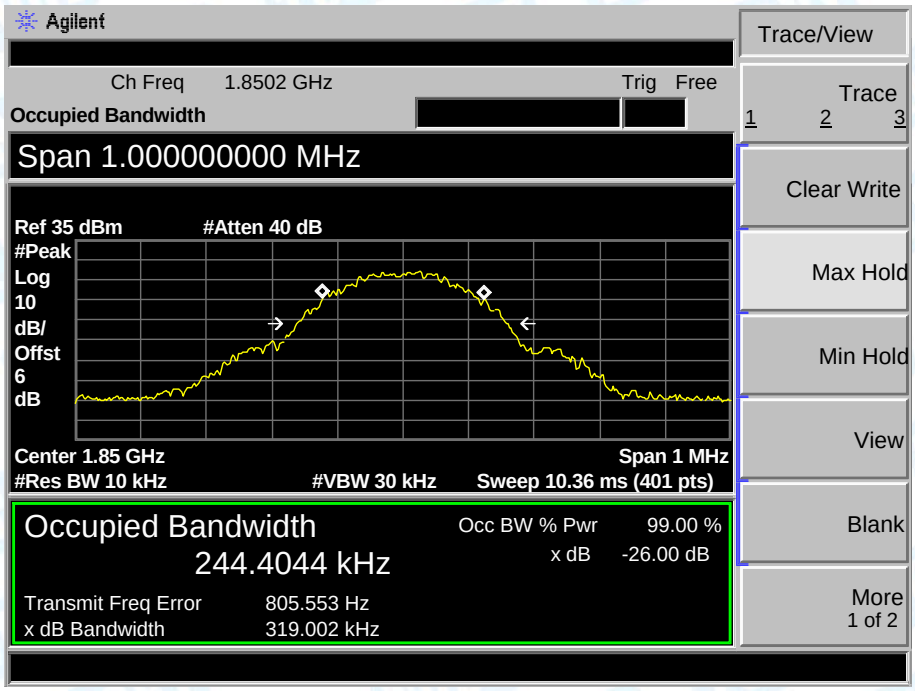

| CH 190 |
| --- |



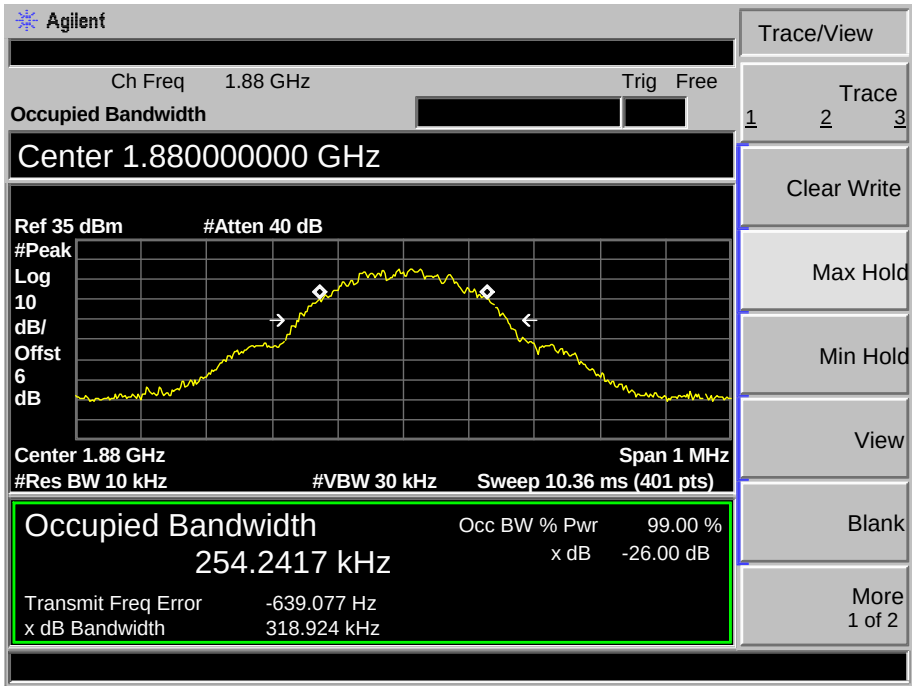
CH 251


Agilent
Trace/View
Ch Freq 848.8 MHz
Trig Free
Occupied Bandwidth
Trace
1 2 3
Center 848.8000000 MHz
Clear Write
Ref 35 dBm
#Atten 40 dB
Max Hold
#Peak
Log
10
dB/
Offst
6
dB
Min Hold
View
Center 848.8 MHz
Span 1 MHz
#Res BW 10 kHz
#VBW 30 kHz
Sweep 10.36 ms (401 pts)
Blank
Occupied Bandwidth
246.1760 kHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
More
1 of 2
Transmit Freq Error -430.337 Hz
x dB Bandwidth 315.053 kHz

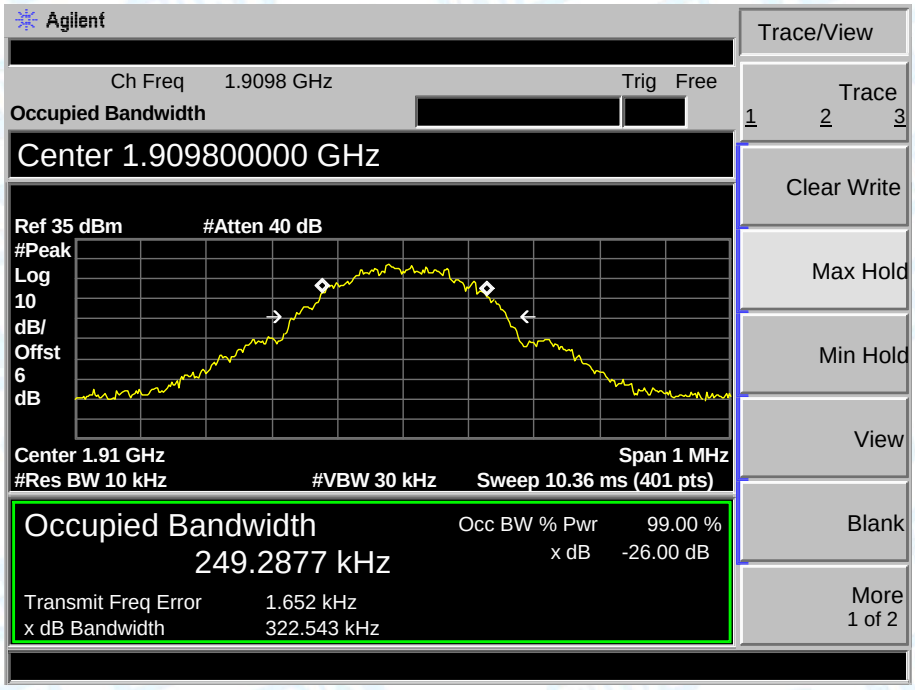
| GSM 1900 |
| --- |
| CH 512 |



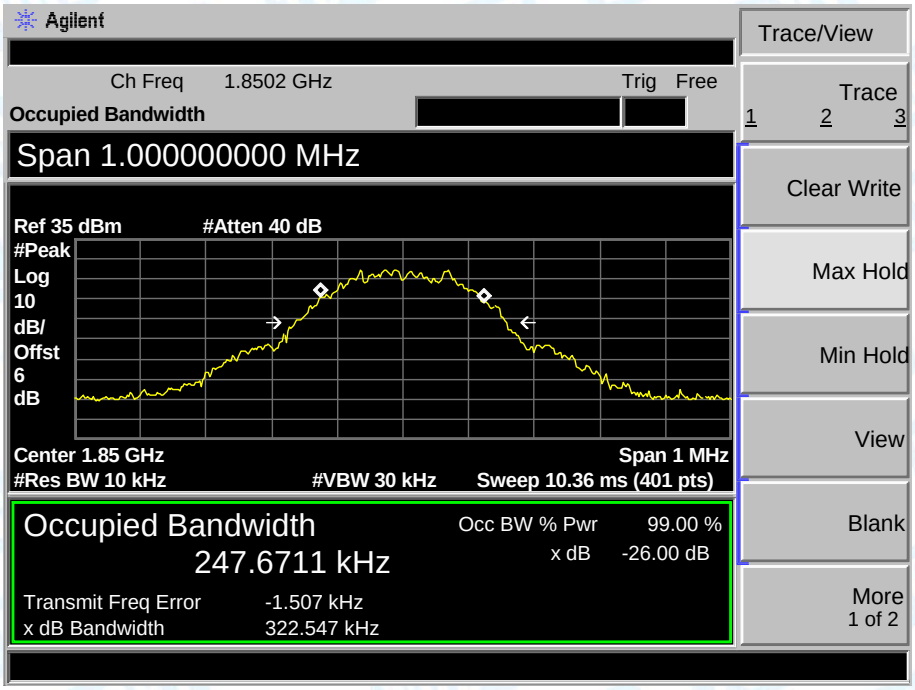

| CH 661 |
| --- |



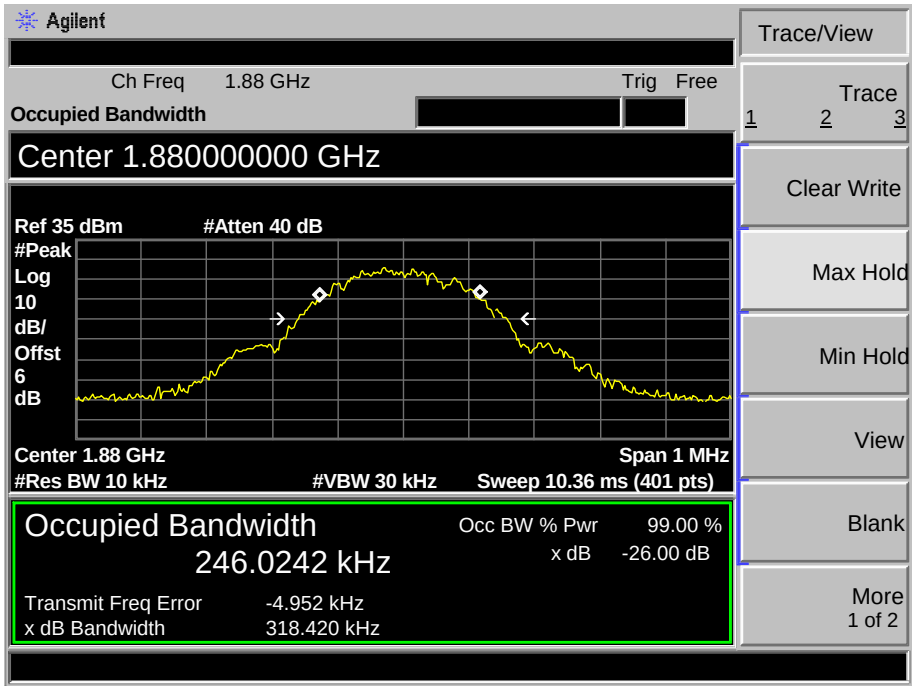
CH 810


Agilent
Trace/View
Ch Freq 1.9098 GHz
Trig Free
Occupied Bandwidth
Trace
1 2 3
Center 1.909800000 GHz
Clear Write
Ref 35 dBm
#Atten 40 dB
Max Hold
#Peak
Log
10
dB/
Offst
6
dB
Min Hold
View
Center 1.91 GHz
Span 1 MHz
#Res BW 10 kHz
#VBW 30 kHz
Sweep 10.36 ms (401 pts)
Blank
Occupied Bandwidth
249.2877 kHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
More
1 of 2
Transmit Freq Error 1.652 kHz
x dB Bandwidth 322.543 kHz

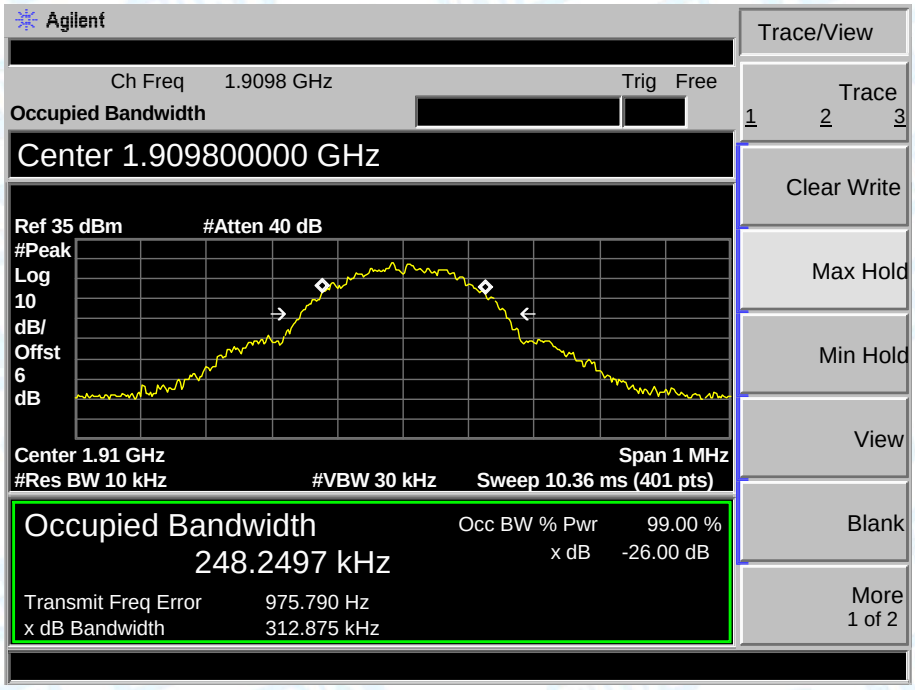
| GPRS 1900 |
| --- |
| CH 512 |




| CH 661 |
| --- |

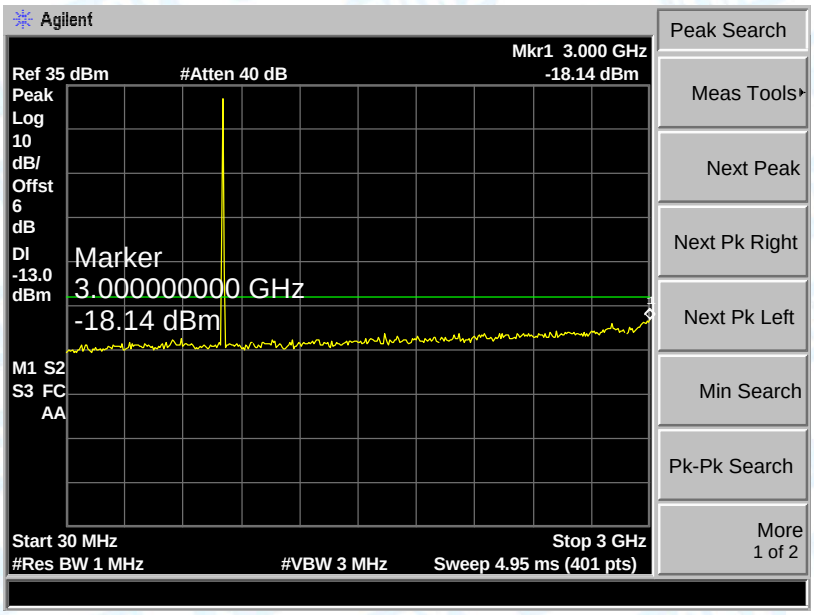


CH 810

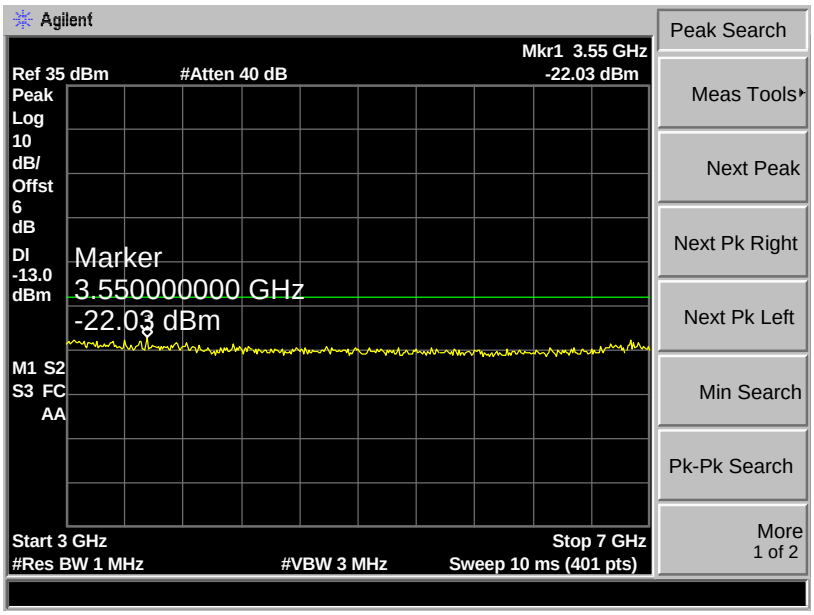

Agilent
Trace/View
Ch Freq 1.9098 GHz
Trig Free
Occupied Bandwidth
Trace
1 2 3
Center 1.909800000 GHz
Clear Write
Ref 35 dBm
#Atten 40 dB
Max Hold
#Peak
Log
10
dB/
Offst
6
dB
Min Hold
View
Center 1.91 GHz
Span 1 MHz
#Res BW 10 kHz
#VBW 30 kHz
Sweep 10.36 ms (401 pts)
Blank
Occupied Bandwidth
248.2497 kHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
More
1 of 2
Transmit Freq Error 975.790 Hz
x dB Bandwidth 312.875 kHz

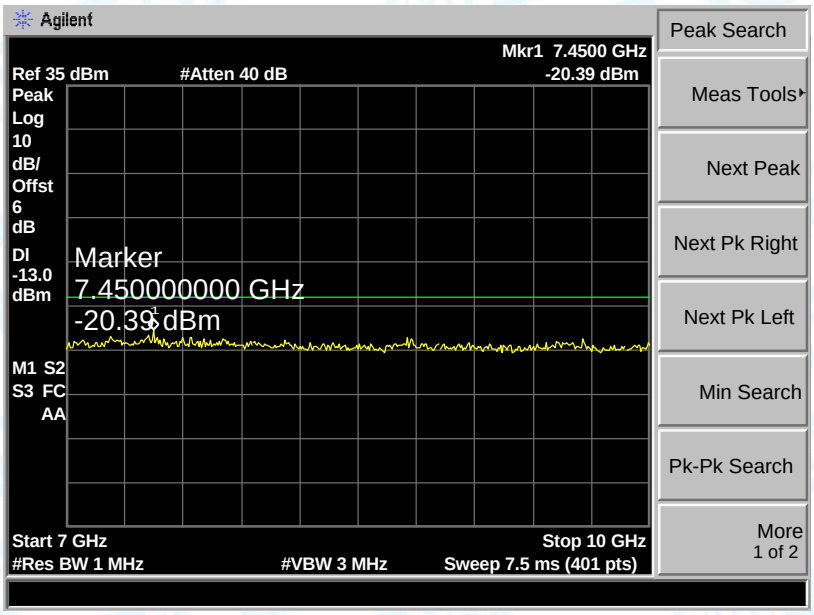
# Attachment F--Conducted Out of Band Emissions

| GSM850 CH 128 |
| --- |
| 30 MHz~ 3 GHz |

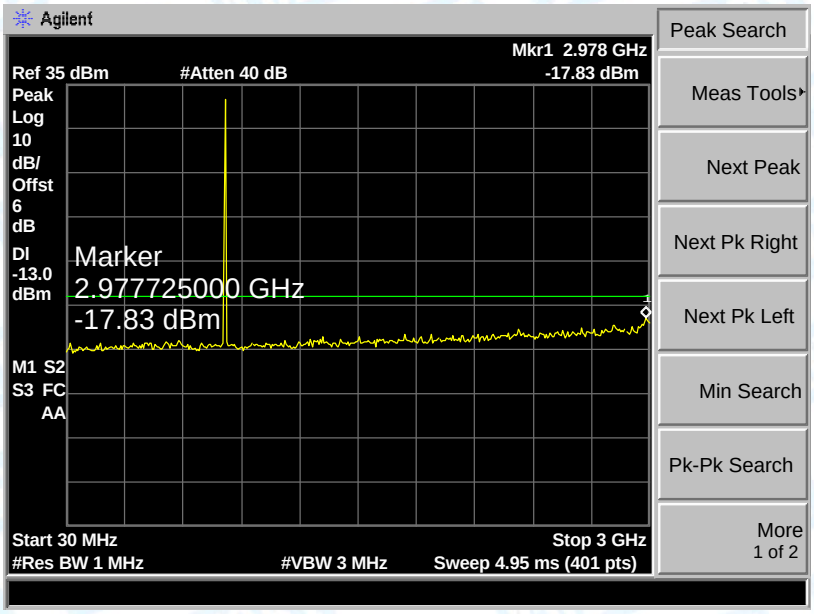
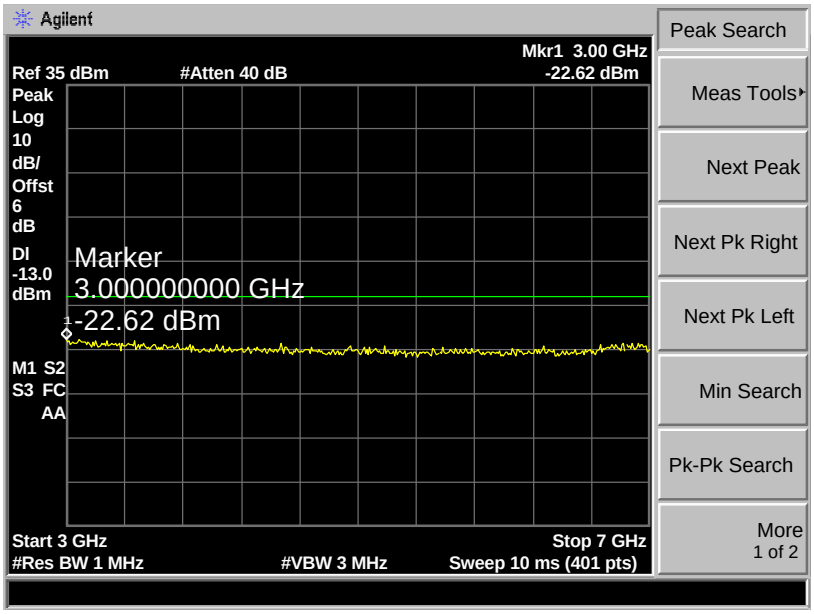



| 3 GHz~7 GHz |
| --- |

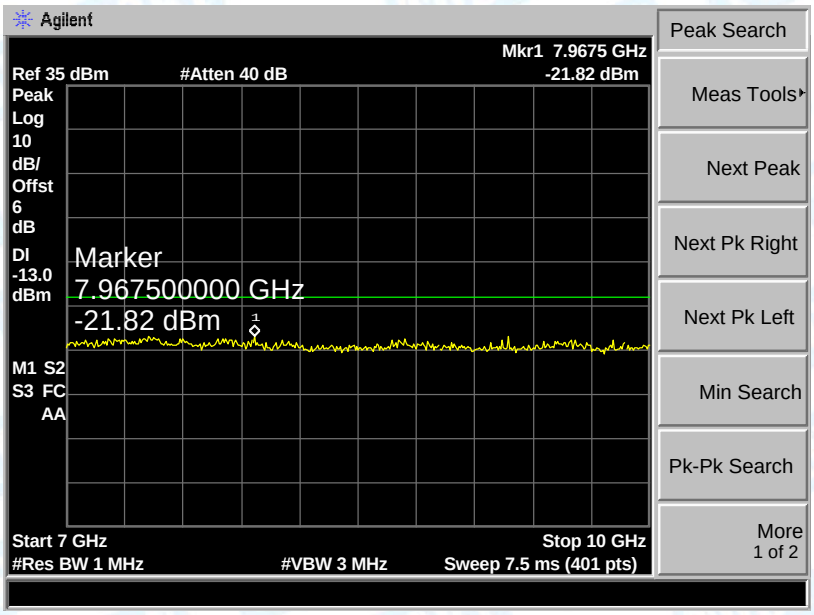


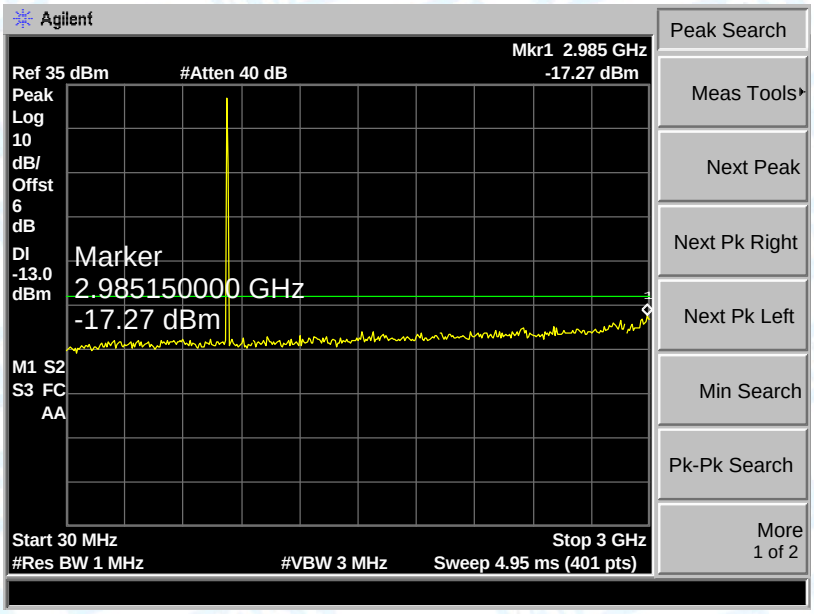
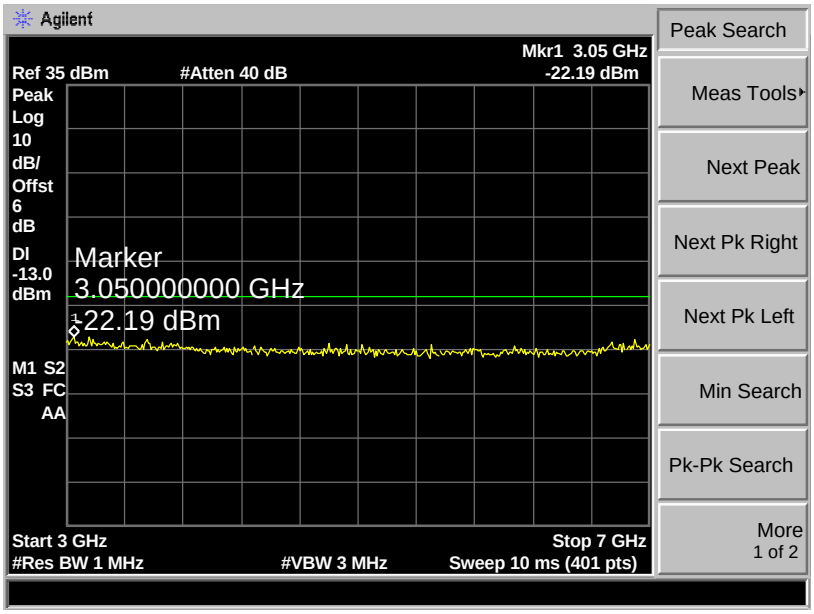
| 7 GHz~10 GHz |
| --- |
|  |

Agilent
Mkr1 7.4500 GHz
Ref 35 dBm
#Atten 40 dB
-20.39 dBm
Peak
Log
10
dB/
Offst
6
dB
Dl
-13.0
dBm
Marker
7.450000000 GHz
-20.39 dBm
M1 S2
S3 FC
AA
Start 7 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 10 GHz
Sweep 7.5 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

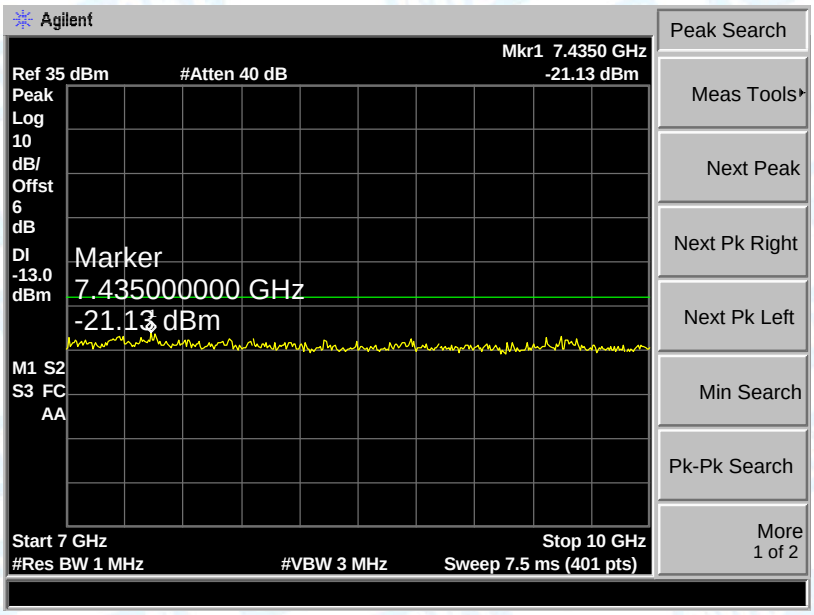
| GSM850 CH 190 |
| --- |
| 30 MHz~ 3 GHz |
|  |
| 3 GHz~7 GHz |
|  |

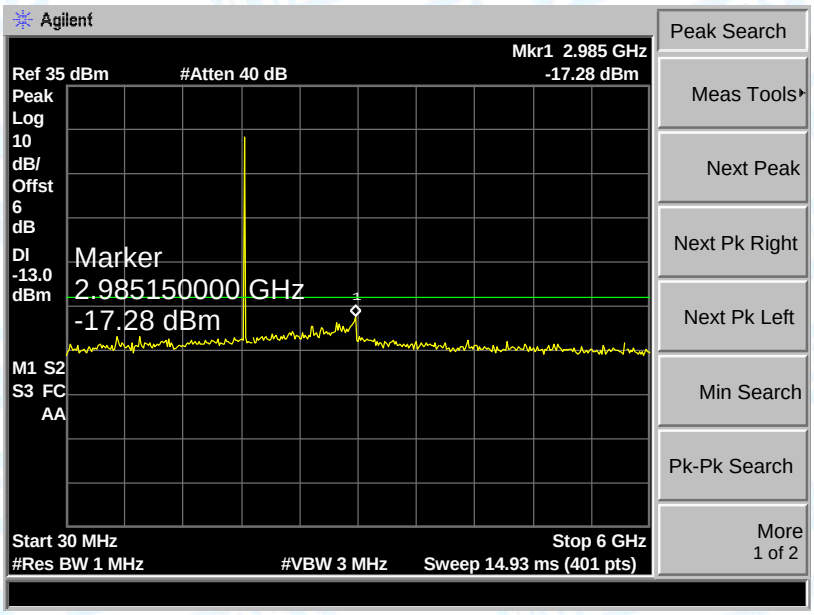
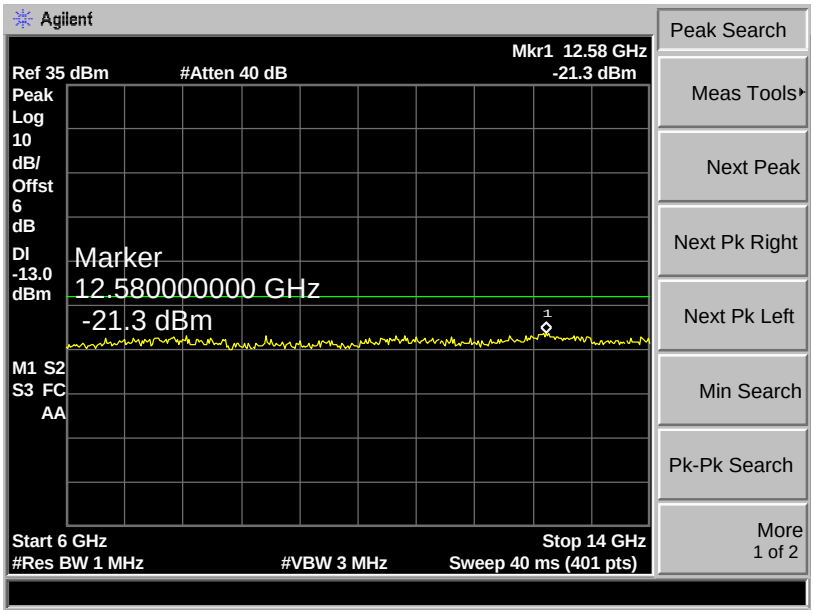
7 GHz~10 GHz


Agilent
Mkr1 7.9675 GHz
Ref 35 dBm
#Atten 40 dB
-21.82 dBm
Peak
Log
10
dB/
Offst
6
dB
Dl
-13.0
dBm
Marker
7.967500000 GHz
-21.82 dBm
M1 S2
S3 FC
AA
Start 7 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 10 GHz
Sweep 7.5 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

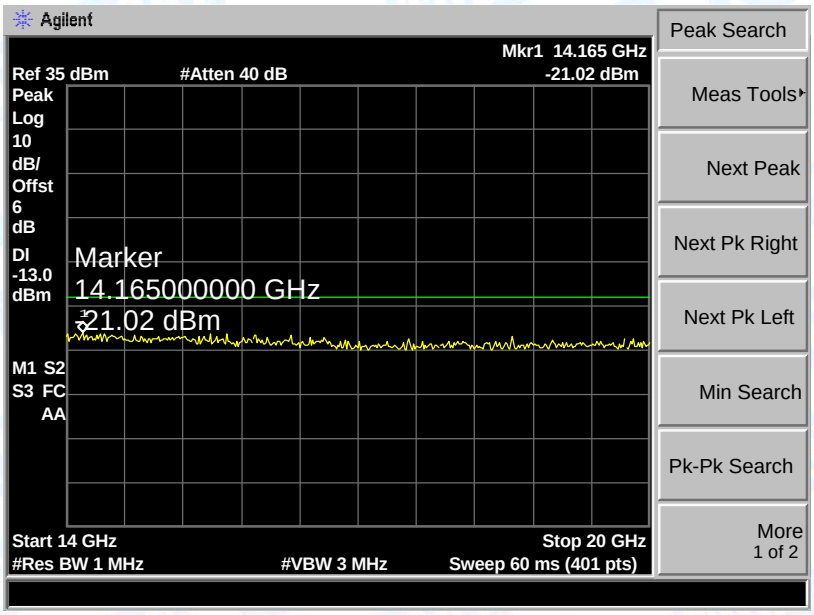
| GSM850 CH 251 |
| --- |
| 30 MHz~ 3 GHz |
|  |
| 3 GHz~7 GHz |
|  |

7 GHz~10 GHz

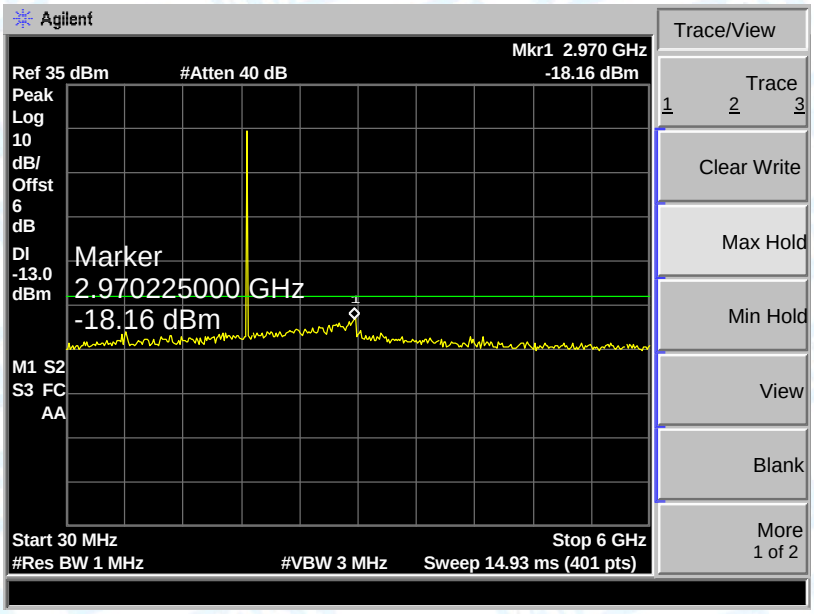

Agilent
Mkr1 7.4350 GHz
Ref 35 dBm
#Atten 40 dB
-21.13 dBm
Peak
Log
10
dB/
Offst
6
dB
Dl
-13.0
dBm
Marker
7.435000000 GHz
-21.13 dBm
M1 S2
S3 FC
AA
Start 7 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 10 GHz
Sweep 7.5 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

| PCS 1900 CH 512 |
| --- |
| 30 MHz~ 6 GHz |
|  |
| 6 GHz~14 GHz |
|  |

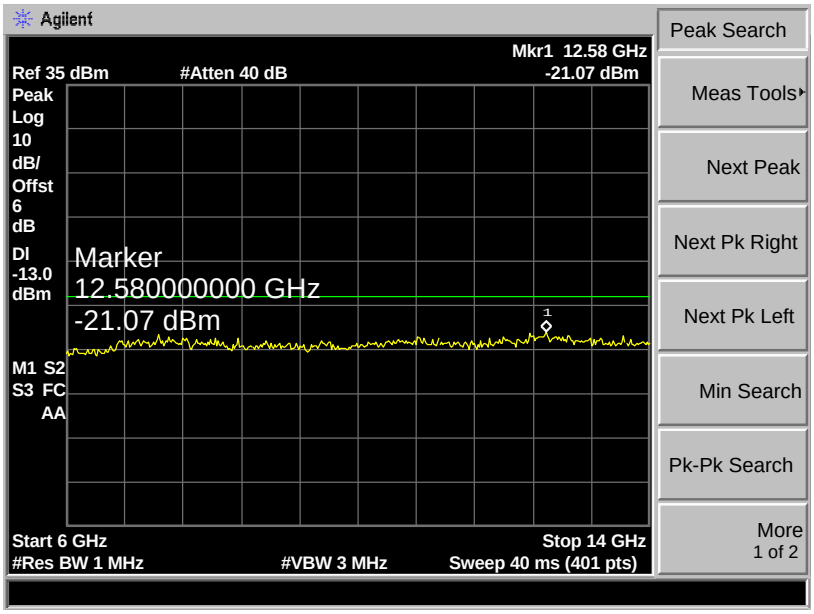
14 GHz~20 GHz


Agilent
Mkr1 14.165 GHz
Ref 35 dBm
#Atten 40 dB
-21.02 dBm
Peak
Log
10
dB/
Offst
6
dB
Dl
-13.0
dBm
Marker
14.165000000 GHz
-21.02 dBm
M1 S2
S3 FC
AA
Start 14 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20 GHz
Sweep 60 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

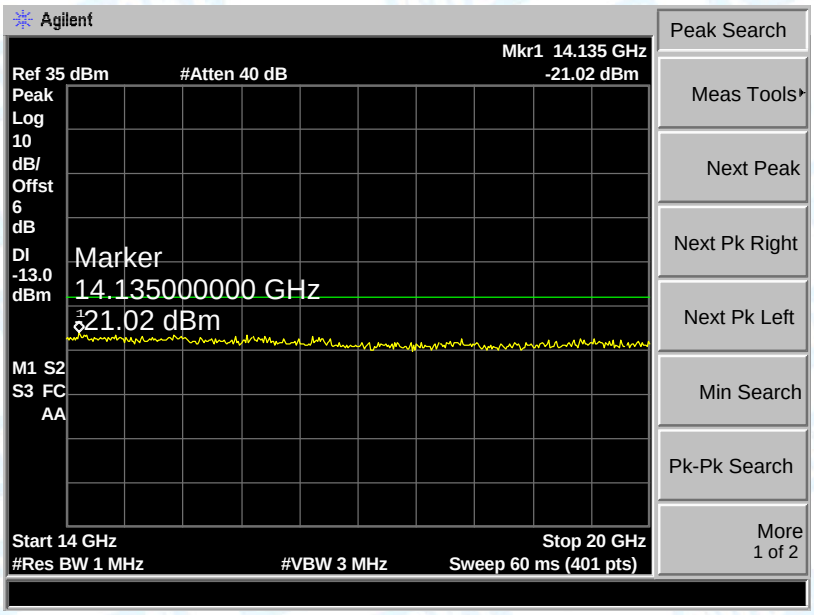
| PCS 1900 CH 661 |
| --- |
| 30 MHz~ 6 GHz |

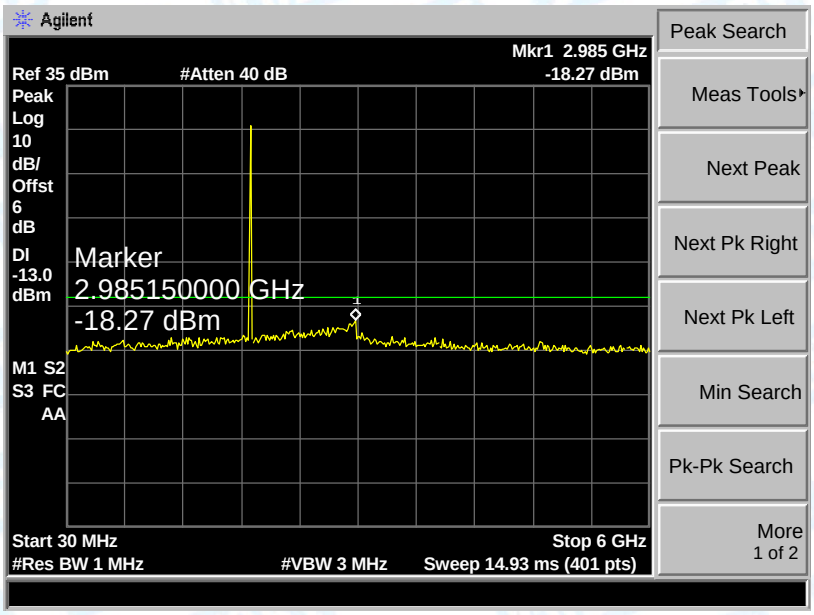
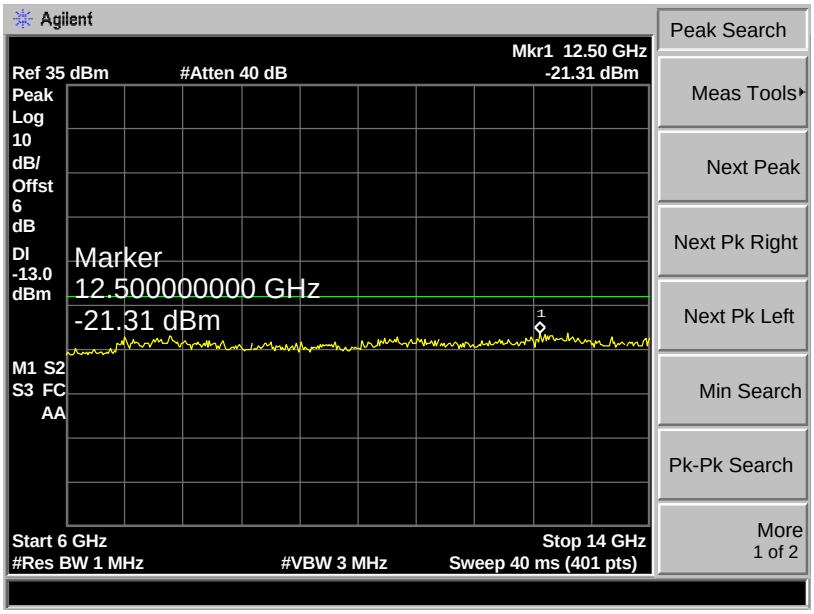



| 6 GHz~14 GHz |
| --- |

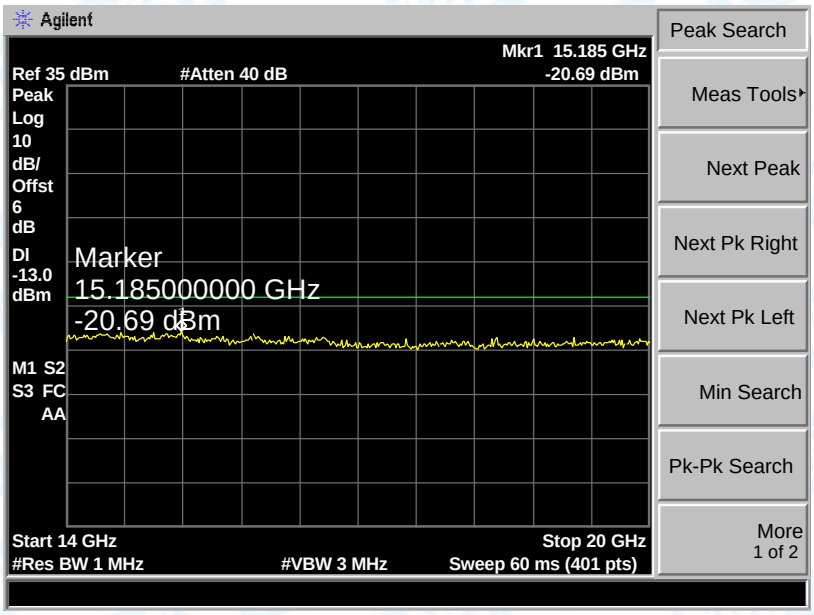


14 GHz~20 GHz


Agilent
Mkr1 14.135 GHz
Ref 35 dBm
#Atten 40 dB
-21.02 dBm
Peak
Log
10
dB/
Offst
6
dB
Dl
-13.0
dBm
Marker
14.135000000 GHz
-21.02 dBm
M1 S2
S3 FC
AA
Start 14 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20 GHz
Sweep 60 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

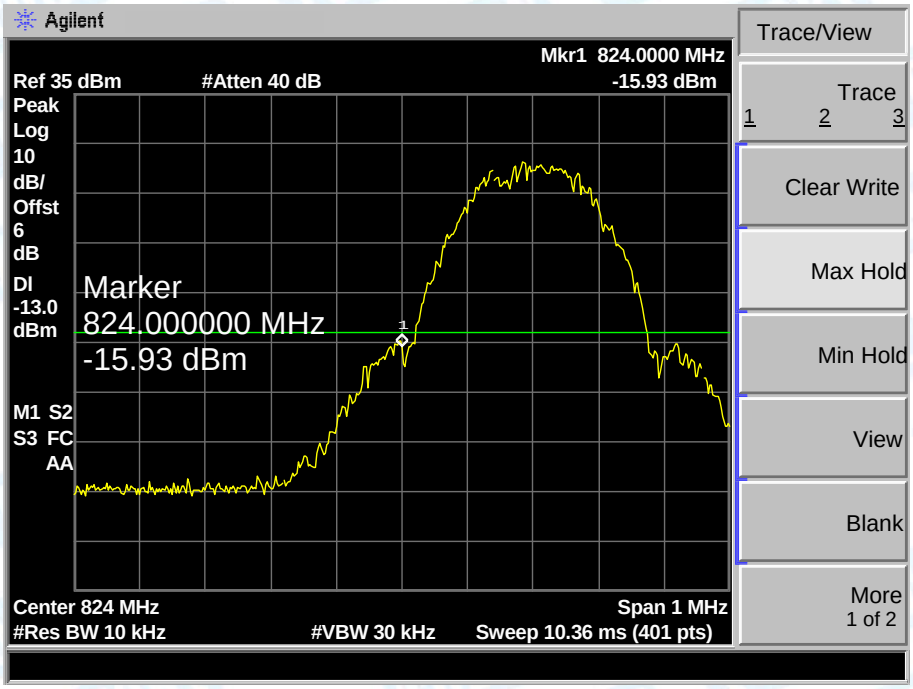
| PCS 1900 CH 810 |
| --- |
| 30 MHz~ 6 GHz |
|  |
| 6 GHz~14 GHz |
|  |

14 GHz~20 GHz

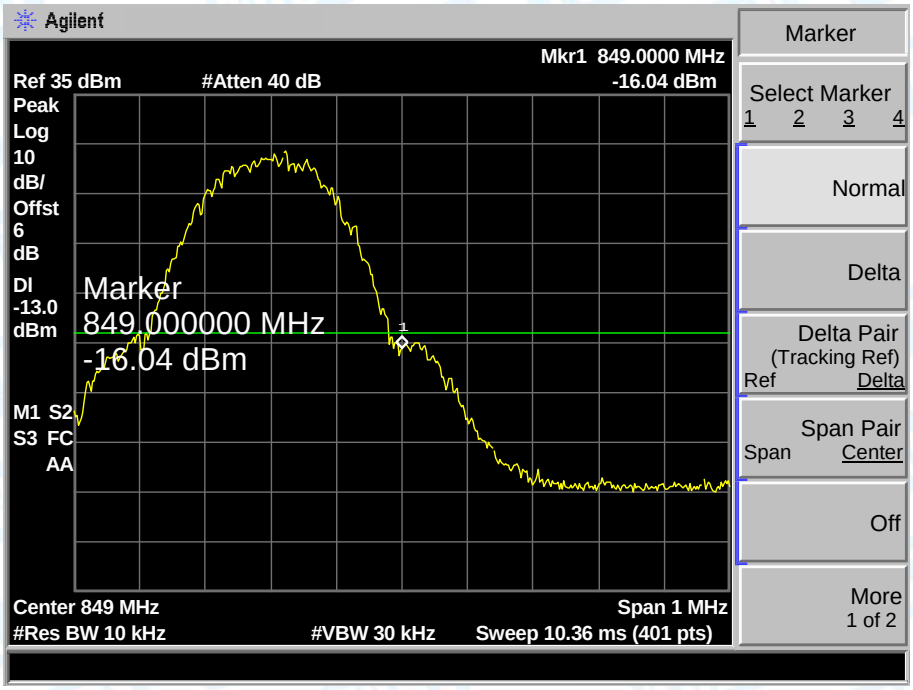

Agilent
Mkr1 15.185 GHz
Ref 35 dBm
#Atten 40 dB
-20.69 dBm
Peak
Log
10
dB/
Offst
6
dB
Dl
-13.0
dBm
Marker
15.185000000 GHz
-20.69 dBm
M1 S2
S3 FC
AA
Start 14 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20 GHz
Sweep 60 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

# Attachment G--Band Edge Test

| Test Mode: | GSM 850 |
|---|---|

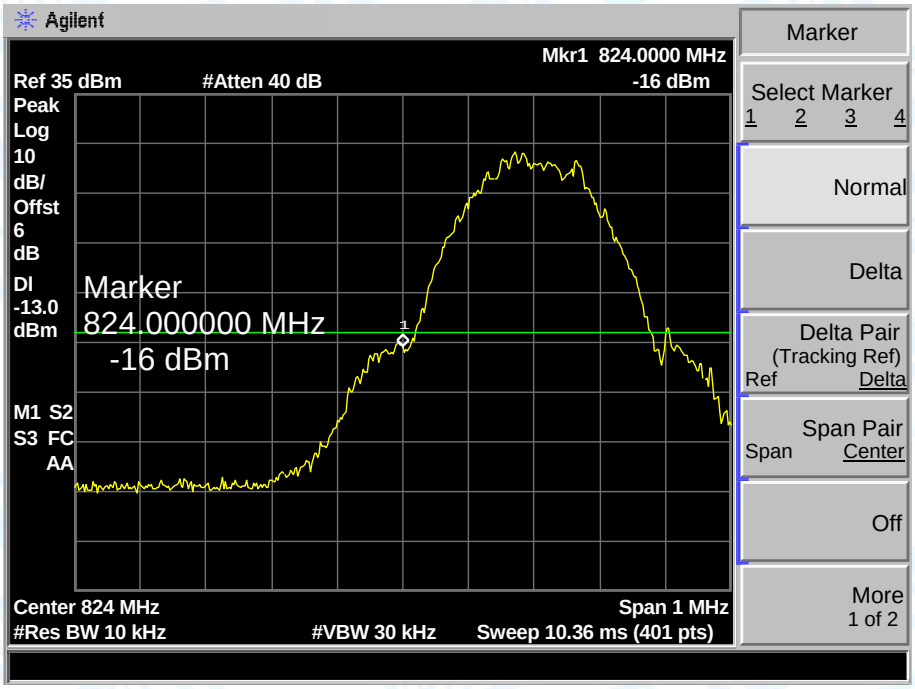



Lowest channel

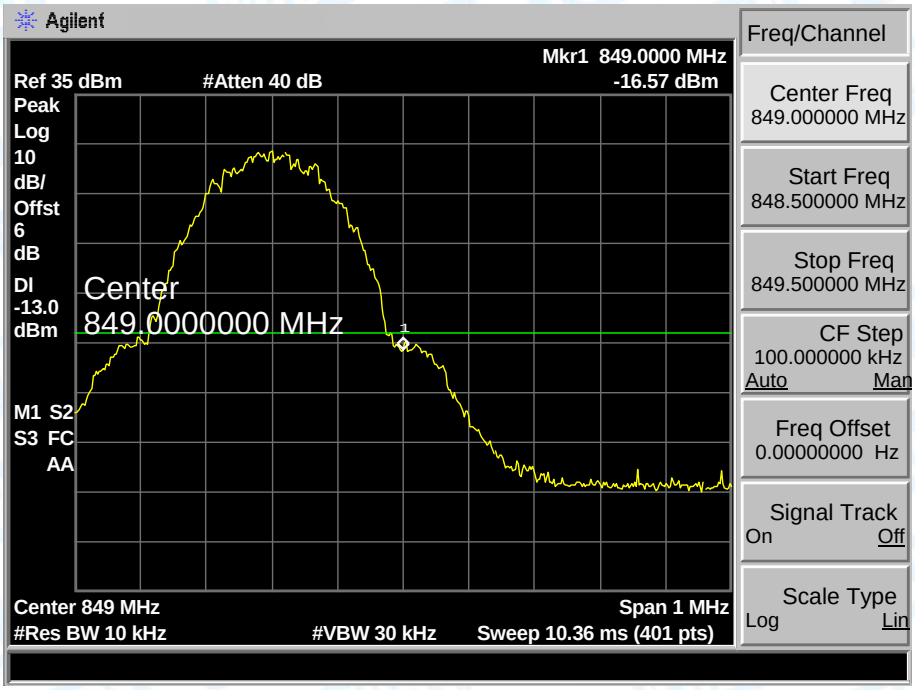



Highest channel

| Test Mode: | GPRS 850 |
|---|---|

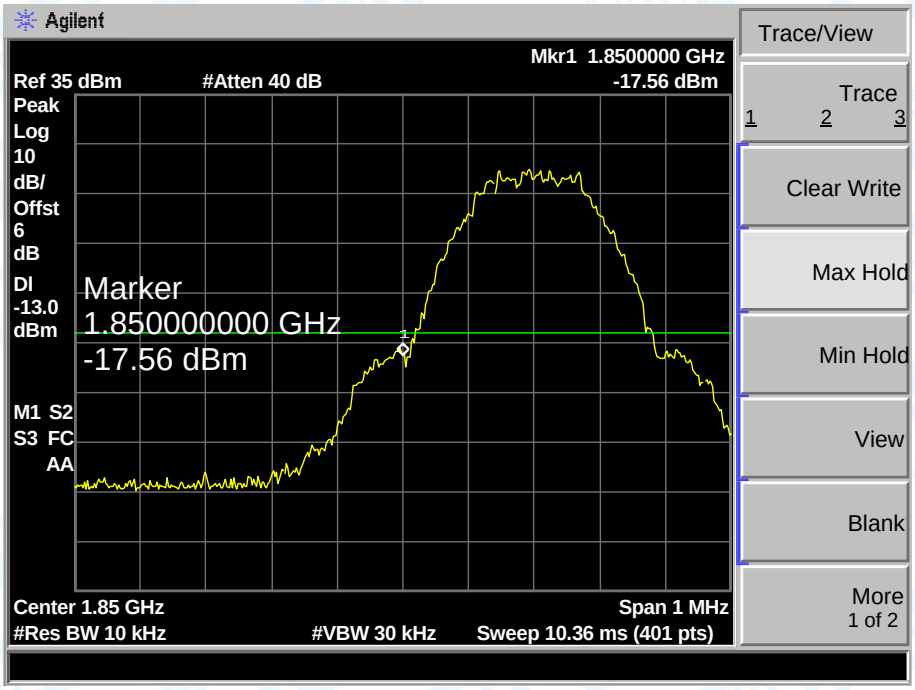



Lowest channel

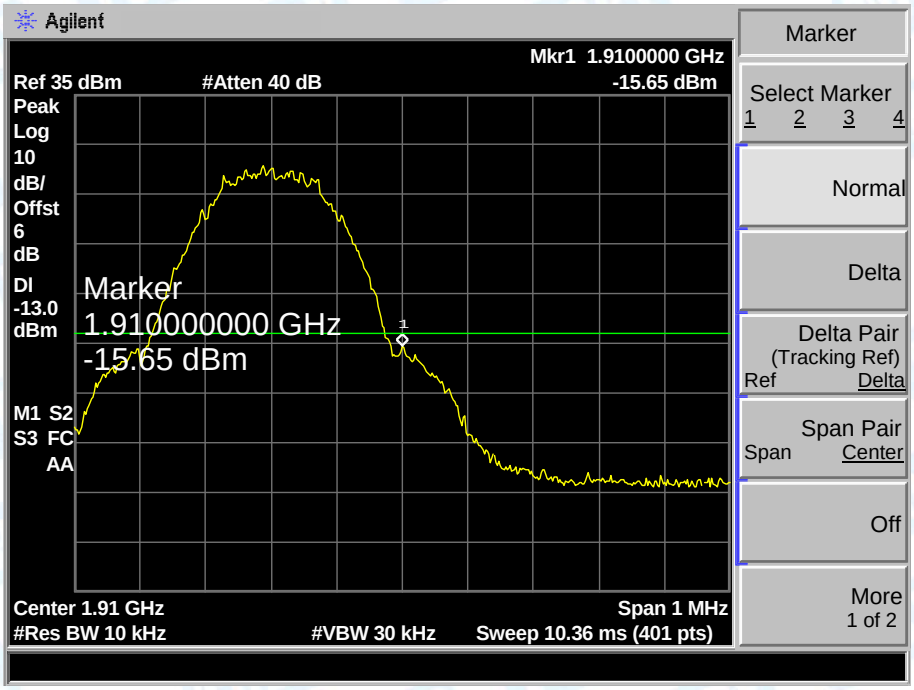



Highest channel

| Test Mode: | GSM1900 |
|---|---|

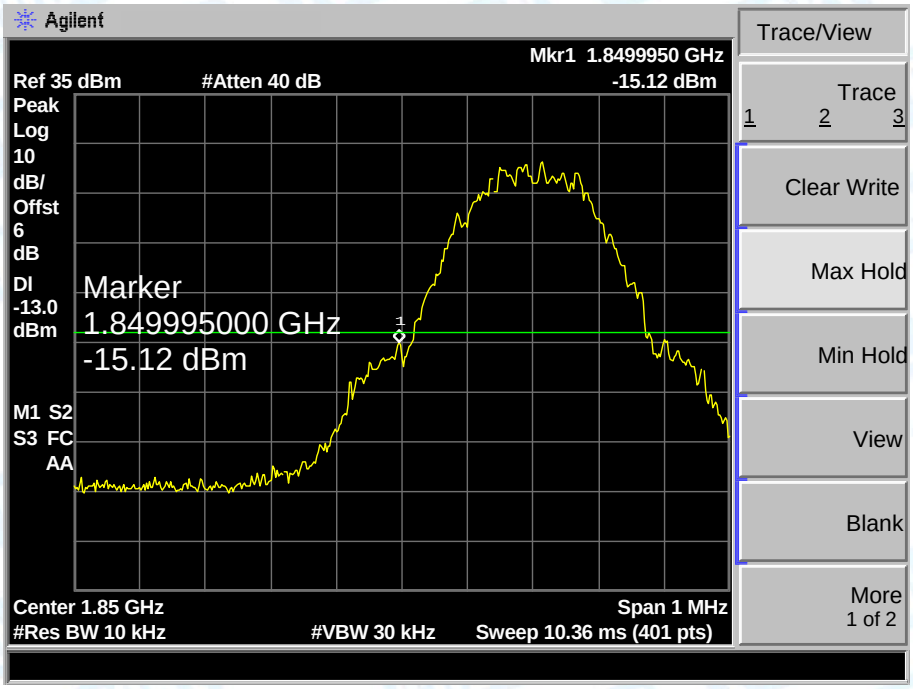



Lowest channel

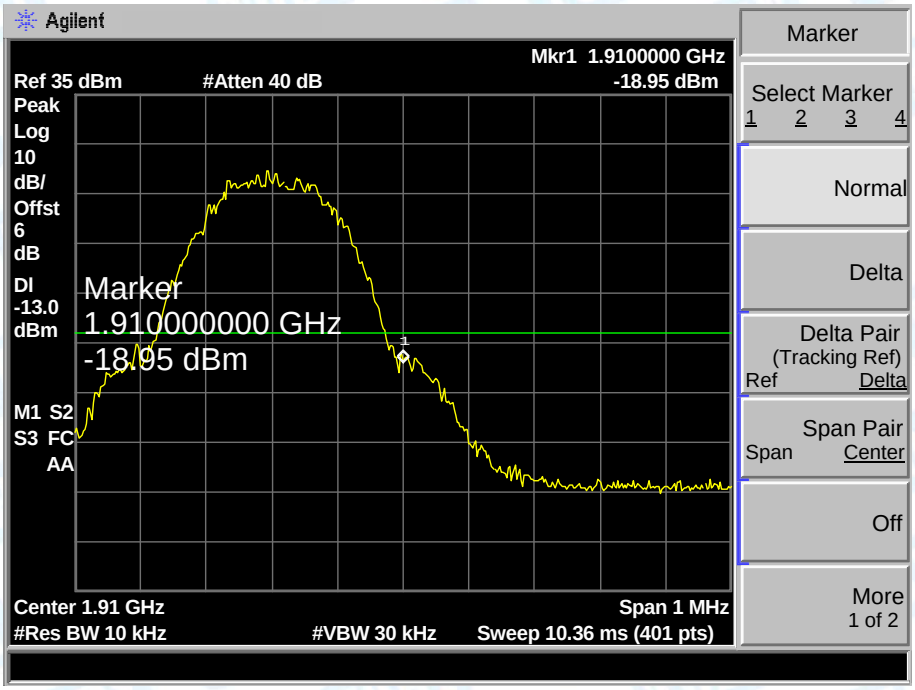



Highest channel

| Test Mode: | GPRS1900 |
|---|---|




Lowest channel




Highest channel

# Attachment H--Radiated Out Band of Emissions

Measurement Data (worst case)

| Test mode: | GSM 850 | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel: | Middle | | | Date of Test: | 2019-04-01 | | |
| Frequency (MHz) | Spurious Emission | | | | | Limit (dBm) | Result |
| | Polarization (H&V) | Read Level (dBm) | Antenna Correct Factor (dBi) | Cable Loss (dB) | Emission Level (dBm) | | |
| 1673.20 | Horizontal | -31.82 | 7.49 | 3.97 | -20.36 | -13.00 | Pass |
| 2509.80 | H | -35.62 | 7.03 | 5.05 | -23.54 | | |
| 3346.40 | H | -44.70 | 12.48 | 5.98 | -26.24 | | |
| 4183.00 | H | | --- | --- | --- | | |
| 5019.60 | H | --- | --- | --- | --- | | |
| 5856.20 | H | --- | --- | --- | --- | | |
| 1673.20 | Vertical | -30.31 | 8.02 | 3.97 | -18.32 | -13.00 | Pass |
| 2509.80 | V | -36.88 | 10.47 | 5.05 | -21.36 | | |
| 3346.40 | V | -48.14 | 16.92 | 5.98 | -25.24 | | |
| 4183.00 | V | --- | --- | --- | --- | | |
| 5019.60 | V | --- | --- | --- | --- | | |
| 5856.20 | V | --- | --- | --- | --- | | |

Remark: 1, The testing has been conformed to 10*836.6MHz=8,366MHz.
2, All other emissions more than 30 dB below the limit.
3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss

| Test mode: | GPRS 850 | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel: | Middle | | | Date of Test: | 2019-04-01 | | |
| Frequency (MHz) | Spurious Emission | | | | | Limit (dBm) | Result |
| | Polarization (H&V) | Read Level (dBm) | Antenna Correct Factor (dBi) | Cable Loss (dB) | Emission Level (dBm) | | |
| 1673.20 | Horizontal | -33.81 | 7.49 | 3.97 | -22.35 | -13.00 | Pass |
| 2509.80 | H | -36.73 | 7.03 | 5.05 | -24.65 | | |
| 3346.40 | H | -45.58 | 12.48 | 5.98 | -27.12 | | |
| 4183.00 | H | | --- | --- | --- | | |
| 5019.60 | H | --- | --- | --- | --- | | |
| 5856.20 | H | --- | --- | --- | --- | | |
| 1673.20 | Vertical | -31.25 | 8.02 | 3.97 | -19.26 | -13.00 | Pass |
| 2509.80 | V | -38.73 | 10.47 | 5.05 | -23.21 | | |
| 3346.40 | V | -49.44 | 16.92 | 5.98 | -26.54 | | |
| 4183.00 | V | --- | --- | --- | --- | | |
| 5019.60 | V | --- | --- | --- | --- | | |
| 5856.20 | V | --- | --- | --- | --- | | |

Remark: 1, The testing has been conformed to 10*836.6MHz=8,366MHz.
2, All other emissions more than 30 dB below the limit.
3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss

| Test mode: | GSM 1900 | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel: | Middle | | | Date of Test: | 2019-04-01 | | |
| Frequency (MHz) | Spurious Emission | | | | | Limit (dBm) | Result |
| | Polarization (H&V) | Read Level (dBm) | Antenna Correct Factor (dBi) | Cable Loss (dB) | Emission Level (dBm) | | |
| 3760.00 | Horizontal | -39.14 | 14.70 | 6.12 | -18.32 | -13.00 | Pass |
| 5640.00 | H | -41.89 | 13.67 | 7.86 | -20.36 | | |
| 7520.00 | H | -46.12 | 14.27 | 9.54 | -22.31 | | |
| 9400.00 | H | --- | --- | --- | --- | | |
| 11280.00 | H | --- | --- | --- | --- | | |
| 13160.00 | H | --- | --- | --- | --- | | |
| 3760.00 | Vertical | -42.10 | 15.81 | 6.12 | -20.17 | -13.00 | Pass |
| 5640.00 | V | -46.02 | 13.80 | 7.86 | -24.36 | | |
| 7520.00 | V | -49.48 | 13.40 | 9.54 | -26.54 | | |
| 9400.00 | V | --- | --- | --- | --- | | |
| 11280.00 | V | --- | --- | --- | --- | | |
| 13160.00 | V | --- | --- | --- | --- | | |

Remark: 1, The testing has been conformed to 10*1880.0MHz=18,800MHz.
2, All other emissions more than 30 dB below the limit.
3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss

| Test mode: | GPRS 1900 | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel: | Middle | | | Date of Test: | 2019-04-01 | | |
| Frequency (MHz) | Spurious Emission | | | | | Limit (dBm) | Result |
| | Polarization (H&V) | Read Level (dBm) | Antenna Correct Factor (dBi) | Cable Loss (dB) | Emission Level (dBm) | | |
| 3760.00 | Horizontal | -40.18 | 14.70 | 6.12 | -19.36 | -13.00 | Pass |
| 5640.00 | H | -43.07 | 13.67 | 7.86 | -21.54 | | |
| 7520.00 | H | -47.46 | 14.27 | 9.54 | -23.65 | | |
| 9400.00 | H | --- | --- | --- | --- | | |
| 11280.00 | H | --- | --- | --- | --- | | |
| 13160.00 | H | --- | --- | --- | --- | | |
| 3760.00 | Vertical | -42.01 | 15.81 | 6.12 | -20.08 | -13.00 | Pass |
| 5640.00 | V | -45.30 | 13.80 | 7.86 | -23.64 | | |
| 7520.00 | V | -48.12 | 13.40 | 9.54 | -25.18 | | |
| 9400.00 | V | --- | --- | --- | --- | | |
| 11280.00 | V | --- | --- | --- | --- | | |
| 13160.00 | V | --- | --- | --- | --- | | |
| Remark: 1, The testing has been conformed to 10*1880.0MHz=18,800MHz.<br>2, All other emissions more than 30 dB below the limit.<br>3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss | | | | | | | |

**------End of the Report------**